From:

Mehta, Ashwin

Sent:

Wednesday, March 03, 2004 5:39 PM

To:

STIC-Biotech/ChemLib

Subject:

seq search

STIC,

Please search the nucleotide sequences of SEQ ID NOs: 1-3 from 10/026,767.

My mail room is 2C18, office 2A19, art unit 1638.

Thank you, Ashwin

Ashwin Mehta United States Patent and Trademark Office Biotechnology Patent Examiner (571) 272-0803

额

3 p

7 27

137 3p 116 34 115²² 4. 12(,5

6 110.5

Searcher: 0. 5 ch ne ber
Phone: 272-25 26
Location: Remsen E 01 A 6 1
Date Picked Up: 3/11
Searcher Prep/Review: 0
Clerical: 1

Online time:_

TYPE OF SEARCH:

NA Sequences:

AA Sequences:

Structures:

Bibliographic:

Litigation:

Full text:

Patent Family:

Other:

```
GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
```

```
Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB seg length: 0
Maximum DB seg length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            March 10, 2004, 10:31:30 ; Search time 9570.21 Seconds (without alignments) 11544.306 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3470272 seqs, 21671516995 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-026-767-1
2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10:
12:
13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 gcggctgcggcaaggcg.....tgtgattgcacatatactaa 2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gb ba:
gb intg
gb on:
gb on:
gb ov:
gb pov:
gb
em_htg_mus:
em_htg_pln:*
em_htg_rod:*
em_htg_mam:*
em_htg_vrt:*
em_htg_vrt:*
em_htgo_nus:*
em_htgo_nus:*
                                                                                                                                                                                                                                                                                                                                                      em_htg_hum: *
em_htg_inv: *
em_htg_other: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6940544
```

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

വധധധധധധ പെ ക ക ക ക ക	Ω ωωωνννννν	, , , , , , , , , , , , , , , , , , ,	Resul No
3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	1085. 1085. 1085. 1087. 1027. 416. 375.		. SCOR
	444000044		B. 20 CCP
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0 7 8 8 6 6 6 6 6	2739 23386 23386 23396 22399 2339 22520 25	D 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1
++8 ~ 8 ~ 8 +++ + 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	N co co co co co co co	, , , , , , , , , , , , , , , , , , ,	. e e e e e
HSU68758 AP503911 HSU76542 AP056574 BC037699 BC033427 AP056573 HSP5CS AP101424 AV069110 AP022914 AF022914 DX572091	177001400		14 1
M68758 Human pyrro AF503911 Suaeda ma U76542 Human pyrro AF056574 Mus muscu BC037699 Mus muscu BC033427 Mus muscu AF056573 Mus muscu AF056573 Mus muscu AF0101424 Cichorium AF101424 Cichorium AF022914 Triticum AE006391 Lactococc BX572091 Prochloro	330 A. tha 330 A. tha 24633 Arabia 138 Arabia 421 M. sat 422 M. sat 78820 Medd 97403 Rap 11016 Ory	6925 Oryza 69925 Oryza 286 Actinidi 286 Actinidi 67967 Mesemb 267 Solanum 05686 Vitis 78818 Medica 14812 Brassi 14812 Brassi 14811 Brassi 14811 Brassi 14812 Bras	ription

ALIGNMENTS

REFERENCE AUTHORS	VERSION KEYWORDS SOURCE ORGANISM	RESULT 1 D49714 LOCUS DEFINITION
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Shrhartoideae; Oryzeae; Oryza. 1 (sites) 1 (garashi,Y., Yoshiba,Y., Sanada,Y., Yamaguchi-Shinozaki,K., Wada,K.	D49714.1 GI:2081611 D49714.1 GI:2081611 deltal-pyrroline-5-carboxylate synthetase; OSP5CS. Oryza sativa Oryza sativa Oryza sativa Grya-rota: Viridinlantae: Strentonhyta: Embryonhyta: Tracheophyta:	D49714 2549 bp mRNA linear PLN 10-FEB-1999 Oryza sativa mRNA for deltal-pyrroline-5-carboxylate synthetase, complete cds.

```
밁
                                                                                                                               Ś
                                                                                                                                                                                                                                  δ
                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                 멂
                                                                                                                                                                                                                                                                                                                                                   $
                                                                                                                                                                                                                                                                                                                                                                                                          뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Si
Matches 2549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEWEDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SdS
              301 AGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAAGCCACAGA 360
                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and Shinozaki, K.
Characterization of the gene for deltal-pyrroline-5-carboxylate
synthetase and correlation between the expression of the gene and
salt tolerance in Oryza sativa L
Plant Mol. Biol. 33 (5), 857-865 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (16-MAR-1995) Yoshu Yoshiba, Hitachi Ltd., Advanced Research Laboratory; Hatoyama, Hiki-gun, Saitama 350-03, Japan (Tel:0492-96-6111, Fax:0492-96-6006)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yoshiba, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             deltal-pyrroline-5-carboxylate synthetase in rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nucleotide sequence of a cDNA encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Igarashi, Y., Yosl
and Shinozaki, K.
                                                                                                     TGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTTGGACTGGGGCGAC
                                                                                                                                                                             GACAAGATGGAAGATTGGCTTTTGGGCAGGGTTGGAGCTGTGTGCGAGCAGGTTAAGGAAC
                                                                                                                                                                                                                         GACAAGATTGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGCAGGTTAAGGAAC
                                                               TGAACTCTTTÄGGÄTÄCGÄÄGTGÄTTTTGGTCÄCCTCAGGTGCTGTTGGAGTGGGGCGAC 300
                                                                                                                                                                                                                                                                                      GGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAGGTGGGCACTGCAGTTGTCTCCA
                                                                                                                                                                                                                                                                                                                                       GGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAGGTGGGCACTGCAGTTGTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                              TGGAGGAGGAGGCTGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCGACCCGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGAGGAGGAGGCTGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCGACCCGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCGGCTGCGGCGAGAGCGGCGAGACGTGGGAGAGGGATTTACAGGTAGAGGGAGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGGCTGCGGCGAAGGCGGCGAGACGTGGGAGAGGGGATTTACAGGTAGAGGGAGAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 2549)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 2549)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MASVDESRS FVRDVKRVIIKVGTAVVSRQDGRLALGRVGALCEQ
VKELMSLGYEVILVTSGAVGVGRQRLKYRKLVNSS FADLGKRQMELDGKACAAVGOSG
LMALYDMLFNQLDVSSSQLLVTDSDFENKYREQTETVESLLDLKVIP PLFNENDALS
TRKAPYEDSSGLFWDNSSLAGLLALELKADLLILLSVNGELYSGPSEDSSKIHTYI
KEKHQQEITFGDKSRVGRGGWTAKVKAAVLASNSGTFVVITSGFENRSILKVLHGEKI
GTLFHKNANLMESSKDVSTTEMAVAARDCSHLOLLSKSERKKILLDVADALEANSDL
IRSENEADVAAAQVAGYEFLVARLTIKFGKLASLASIRTLAWNEDPINGILKKTEV
ADDIVLEKTSCPLGVLLIVFESRPDALVQIASLAIRSGNGLLLKGGKEAIRSNTILHK
VITDAIFNNVGEKLIGJVTTRDEIADLLKLDDVLDVTFRGSNKLVSGLKASTKLFVL
GHADGICHVIDKSADMDMAKLIVMDAKTDYFACNAMETLLVHKDLMKSPGLDDILV
ALKTEGVNIYGGFIAHKALGFPKAVSFHHEYSSNACTVEFVDDVGSAIDHIHRYGSAH
TDCIVTTDBKVAETFLARVDSAAVFHAASTRESDGARFGLGAEVGISTGRIHARGPVG
VEGTITTMBUTT COLONNANSTELLRRDDSAAVFHAASTRESDGARFGLGAEVGISTGRIHARGPVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /EGLLTTRWILRGRGQVVNGDKDVVYTHKSLPLQ"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="deltal-pyrroline-5-carboxylate synthetase"
/protein_id="BAA19916.1"
/db_xref="GI:2081612"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Oryza sativa"
/mol_type="mRNA"
/cultivar="Akibare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gene="OSP5CS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene="OSP5CS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . 2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _xref="taxon:4530"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yoshiba, Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%; Score 2549;
100.0%; Pred. No. 0;
cive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sanada, Y., Wada, K., Yamaguchi-Shinozaki, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 2549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                             180
                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                     Ś
                                                                                            밁
                                                                                                                                              S
                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
1381 GAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGGAAGCTATCAGATCAAACACGATAT 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                      TCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTC
                                                                                                                                                                                            AAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCATTAGGTGTTC
                                                                                    TCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTC
                                                                                                                                                                                                                                             AAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCATTAGGTGTTC
                                                                                                                                                                                                                                                                                                                                                         GCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ттостосьтатсяся в постаствет в п
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCTACAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGATGTTGCAGATGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                TTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAG 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCTACAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGATGTTGCAGATGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTAAAGTTCTTCATGGGGAAAAATTGGTACTCTCTTTCACAAGAATGCGAATTTGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTTTTCACAAGAATGCGAATTTGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAAAATCGGAGCATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAAAATCGGAGCATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGGAGACAAATCTCGTGTAGGTAGAGGGAGGCATGACAGCCAAAAGTGAAGGCTGCTGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACCATCATCAAAAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGAAATCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACCATCATCATACATACACACACTTATATTATAAGAAAAGCATCAGCAAGAAATCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGTGAAGGCTGCTGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGAGTTAGATGGÀAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAAGCCCACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGG
                                                                                                                                                                                                                                                                                                       GCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTA
                                                                                    1380
                                                                                                                                        1380
                                                                                                                                                                                                                                                1320
                                                                                                                                                                                                                                                                                                                                                                                                                1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1020
                                                                                                                                                                                                                                                                                                       1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
```

Ü	1381	GAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACGATAT 1440	
	1441 1441	TGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTG 1500	
	1501 1501	TTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCA 1560	
	1561 1561	61 CTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTC 1620	
	1621 1621	TTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAATCAGCTGACATGGATATGG 1680	
	1681	CABABCTTATTGTBATGGATGCABABACTGATTACCCAGCAGCCTGCAATGCAA	
0 \	1741 1741	CCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCAC 1800	
	1801	TAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTCTGGGATTTC 1860	
	1861	CAAAAGCTGTTTCATTCATCATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTG 1920	
•	1921 1921	ATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGATTGTA 1980	
,	1981 1981	TCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTG 2040	
	2041	TATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGG 2100	
	2101	TTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAA 2160	
0 1	2161 2161	CTACACGATGGATCTTGCGAGGACGTGGGGCAAGTGGTGAATGGTGACAAGGATGTCGTGT 2220	
0 \	2221 2221	ACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTTAGCCTGTTCAGGAG 2280	
0 \	2281 2281	TAGGTGAATATCCTTTTAAGAATGGATTGACTACTTTATTTTGTCATCTTGTACAAGCAT 2340 	
0 \	2341 2341	CTTATTGCGGCATTCCGATGGATTATTGATTTTGGGGGTTCCCACTTTCAAATGTGACAC 2400	
	2401	CAAAATAAATTCATCAGTICTGAGAGCAAGATTTTGGAGGTTCAGCTTCTCCATGTAAT 2460 	
	2461	AAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGTTATGTAATGAGCGAT 2520 BAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGTTTGT	

Ş 뫄 δ 닭 S 맑 S 밁 Ś 뮍 Ś 밁 Ś 멂 Ş 밁 Ś

음 성 음 성 음

유 상 유

중 음 중

8 8 8 8 8 8

2461 AAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGCTTGTAATGAGCGAT 2520

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 2
AK102633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                           RS Adachi, J. Alizawa, K., Akimura, T., Arakawa, T., Carninci, P., Doi, K., Ryjimura, T., Fukuda, S., Hanagaki, T., Hara, A., Hashizume, M., Fujimura, T., Fukuda, S., Hanagaki, T., Hara, A., Hashizume, M., Fujimura, T., Fukuda, S., Hanagaki, T., Hayashida, K., Hiramoto, K., Hiramoto, K., Hiramoto, K., Hiramoto, K., Hiramoto, K., Hiramoto, K., Inamura, K., Hort, F., Hotta, I., Iida, J., Iida, Y., Ikeda, R., Imamura, K., Hort, F., Hotta, I., Iida, Y., Ishikawa, M., Itoh, M., Kagawa, I., Kanagawa, S., Katoh, H., Kawagashira, N., Kawai, J., Kawai, J., Kawamata, M., Kodama, T., Kojima, K., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Kodama, T., Kojima, K., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Kurosaki, T., Kusumegi, T., Li, C., Li, M., Masuda, H., Matsubara, K., Matsuyama, T., Miura, J., Miyazaki, A., Marikawa, R., Niikura, J., Nishi, K., Nomura, K., Numasaki, T., Narikawa, R., Niikura, J., Nishi, K., Nomura, K., Numasaki, T., Narikawa, R., Niikura, J., Nishi, K., Nomura, K., Numasaki, R., Otca, M., Ohtsuki, K., Oka, M., Ooka, H., Osako, N., Otca, M., Ohtsuki, K., Satoh, K., Sabati, K., Sakazume, N., Sano, H., Sasaki, D., Sato, K., Satoh, K., Shibata, K., Shibata, K., Shibata, K., Shibata, K., Satoh, K., Satoh, K., Shibata, K., Sugano, S., Shibata, K., Suzuki, Y., Tagama, A., Takada, Y., Ueda, M., Waki, K., Xie, Q., Yahagi, W., Yamada, H., Yamamoto, M., Yasunishi, A., Yazaki, J., Yokomizo, S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The Rice Full-Length cDNA Consortium, National Institute of Agrobiological Sciences Rice Full-Length cDNA Project Team:, Kikuchi, S., Satoh, K., Nagata, T., Kawagashira, N., Doi, K., Kishimoto, N., Yazaki, J., Ishikawa, M., Yamada, H., Ooka, H., Hotta, I., Kojima, K., Namiki, T., Ohneda, E., Yahagi, W., Suzuki, K., Li, C., Ohtsuki, K., Shishiki, T., Foundation of Advancement of International Science Genome Sequencing & Analysis Group:, Otomo, Y., Murakami, K., Iida, Y., Sugano, S., Fujimura, T., Suzuki, Y., Tsunoda, Y., Kurosaki, T., Kodama, T., Masuda, H., Kobayashi, M., Xie, Q., Lu, M., Narikawa, R., Sugiyama, A., Mizuno, K., Yokomizo, S., Niikura, J., Kusumegi, T., Oka, M., Ryu, R., Ueda, M., Matsubara, K., RIKEN:, Kusumegi, T., Oka, M., Ryu, R., Ueda, M., Matsubara, K., RIKEN:, Kawai, J., Carninci, P., Adachi, J., Alzawa, K., Arakawa, T., Fukuda, S., Hara, A., Hashidume, W., Hayatsu, N., Imotani, K., Ishii, Y., Itoh, M., Kagawa, I., Kondo, S., Konno, H., Miyazaki, A., Osato, N., Ota, Y., Saito, R., Sasaki, D., Sato, K., Shibata, K., Shinagawa, A., Shiraki, T., Yoshino, M. and Hayashizaki, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2521 ACTAACATCTGTGATTGCACATATACTAA 2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2521 ACTAACATCTGTGATTGCACATATACTAA 2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AK102633.1 GI:32987842
FII_CNA, CAP trapper.
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Sukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
                                                                         Direct Submission
Submitted (27-AUG-2002) Shoshi Kikuchi, National Institute of
Submitted (27-AUG-2002) Shoshi Kikuchi, National Institute of
Agrobiological Sciences, Department of Molecular Genetics, Head of
Laboratory of Gene Expression; 2-1-2 Kannondai, Tsukuba, Ibaraki
305-8602, Japan (E-mail:skikuchi@nias.affrc.go.jp,
Tel:81-29-838-7007)
This clone is one of the 28K full-length cDNA clones from japonica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AK102633 2767 bp mRNA linear PLN 24-JUL-200
Oryza sativa (japonica cultivar-group) cDNA clone:J033099M14, full
URL : http://cdna01.dna.affrc.go.jp/cDNA/
                                                                                                                                                                                                                                                                                                                                                                                                  Yoshimura,A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Science 301 (5631), 376-379 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  insert sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Japonica rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 2767)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PLN 24-JUL-2003
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 2542;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in Riken: Adachi, J., Alzawa, K., Akimura, T., Arakawa, T., Carninci, P., Fukuda, S., Hanggaki, T., Hara, A., Hashizume, W., Hayashida, K., Hayateu, N., Hiramoto, K., Hiramoka, T., Hori, F., Ida, J., Imamura, K., Imotani, K., Ishii, Y., Itoh, M., Kagawa, I., Kanagawa, S., Katoh, H., Kawai, J., Kishikawa-Hirozane, T., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Kishikawa-Hirozane, T., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, A., Murata, M., Nakamura, M., Nishi, K., Nomura, K., Numasaki, R., Ohno, M., Osato, N., Ota, Y., Saltoh, H., Sakai, C., Sakai, K., Sakazume, N., Sano, H., Sasaki, D., Sato, K., Shibata, K., Shinagawa, A., Shiraki, T., Sogabe, Y., Tagami, M., Tagami-Takeda, Y., Tagawa, A., Takahashi, F., Takaku-Akahira, S., Tanaka, T., Tomaru, A., Toya, T., Waki, K., Yasunishi, A. and Hayashizaki, Y.
                                                481
                                                                                                         441
                                                                                                                                                               421
                                                                                                                                                                                                                         381
                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                        321
                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                     261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FAIS Genome Sequencing & Analysis Group: Otomo,Y., Iida,Y.,
Fujimura,T., Ikeda,R., Ishibiki,J., Kawamata,M., Kobayashi,M.,
Kodama,T., Kurosaki,T., Kusumegi,T., Li,M., Masuda,H., Miura,J.,
Mizumo,K., Narikawa,R., Niikura,J., Oka,M., Ryu,R., Sugamo,S.,
Sugiyama,A., Suzuki,Y., Tsunoda,Y., Ueda,M., Xie,Q., Yokomizo,S.,
Yoshimura,A., Matsubara,K. and Murakami,K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NIAS Rice Full-Length cDNA Project Team: Kikuchi,S., Satoh,K., Nagata,T., Kawagashira,N., Doi,K., Kishimoto,N., Yazaki,J., Ishikawa,M., Yamada,H., Ooka,H., Hotta,I., Kojima,K., Namiki,T., Ohneda,E., Yahagi,W., Suzuki,K., Li,C., Ohtsuki,K., Shishiki,T. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yamamoto, M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                           TTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTA
                                                                                                            ATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATT
                                                                                                                                             ATATGTTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATT
                                                                                                                                                                                                                      TGGAGTTAGATGGAAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACG
                                                                                                                                                                                                                                                                            TGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACG
                                                                                                                                                                                                                                                                                                                                                                             AGCGACITAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAAGCCACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAACTCTTTAGGATACGAAGTGATTTTTGGTCACCTCAGGTGCTGTTTGGAGTGGGGCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGCAGGTTAAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGCAGGTTAAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAGGTGGGCACTGCAGTTGTCTCCA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGAGGAGGAGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCGACCCGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGGCTGCGGCGAAGGCGAGGCGTGGGAGAGGGATTTACAGGTAGAGGGAGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGGCTGCGGCGAAGGCGGCGAGACGTGGGAGAGGGATTTACAGGTAGAGGGAAGAGGG
TTGAGAÁCCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAACTCTTTAGGATACGAAGTGATTTTTGGTCACCTCAGGTGCTGTTTGGAGTGGGGCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGAGGAGGAGAGCTGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCGACCCGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Oryza sativa (japonica cultivar-group)"
|mol type="mRNA"
|cultivar="Nipponbare"
|/db xref="taxon:39947"
|/clone="J033099M14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
1. .2767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99.2%;
99.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Score 2527.4; 
; Pred. No. 0; 
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 8; Length 2767;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>'</u>
560
                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80
                                                                                                         500
                                                                                                                                                                                                                      440
                                                                        8
                                                                                                                                 片
                                                                                                                                                                                     8
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  딣
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ᅜ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                 1401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
                           TTCCAAGAGGAAGTAATAAGCTTGTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTC 1640
                                                            CTCCAAGAGGAAGTAATAAGGTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTC 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTA 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAG 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCTACAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGATGTTGCAGATGCTT 1080
                                                                                                                                    TTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCA
                                                                                                                                                                                           TTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCA
                                                                                                                                                                                                                                                                                                    TGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTG
                                                                                                                                                                                                                                                                                                                                                                 GAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACGATAT
                                                                                                                                                                                                                                                                                                                                                                                                        GAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACGATAT 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTC 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTC 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCCATTAGGTGTTC 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAA 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAAAGTTCTTCATGGGGAAAAATTGGTACTCTCTTTCACAAGAATGCGAATTTGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAAAATCGGAGCATTC 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGTGAAGGCTGCTGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACCATCATCAAAAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGAAATCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTG
                                                                                                                                                                                                                                                    TGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCATTAGGTGTTC 1340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACAAGAATGCGAATTTGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAAAATCGGAGCATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGGAGACAAATCTCGTGTAGGTAGAGGGCATGACAGCAAAAGTGAAGGCTGCTGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACCATCATCAAAAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGAAATCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGA 660
```

1040

980 960 920 860 840 008 780 740 720 680

620

1220

밁 Ş

Ś 밁 Ş

片

á 밁 Ś 멍 Ş 밁 S

> 1580 1560

1520 1500 1460 Ś

g

밁

```
RESULT 3
E15267
LOCUS
                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     $
                                                                                                                                    밁
                                                                                                                                                          S
                                                                                                                                                                                       밁
                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       맒
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       昂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
            VERSION
                           ACCESSION
                                                     DEFINITION
 KEYWORDS
                                                                                                                                    2540
                                                                                                                                                                                                                   2461
                                                                                                                                                                                                                                                                                                                             2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1761
                                                   Oryza sativa mRNA for deltal-pyrroline-5-carboxylic
E15267.1 GI:5709950 JP 1998057069-A/1.
                        E15267
                                                                E15267
                                                                                                                                 ACTAACATCTGTGATTGCACATATACTAA 2568
                                                                                                                                                     ACTAACATCTGTGATTGCACATATACTAA 2549
                                                                                                                                                                                                                AAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGCTTGTAATGAGCGAT 2520
                                                                                                                                                                                                                                                             CAAAAATAAATTCATCAGTTCTGAGAGACAAGATTTTGGAGGTTCAGCTTCTCCATGTAAT
                                                                                                                                                                                                                                                                                                                 CTTATTGCGGCATTCCGATGGATTATTGATTTTGGGGGTTCCCACTTTCAAATGTGACAC
                                                                                                                                                                                                                                                                                                                                                     TAGGTGAATATCCTTTTAAGAATGGATTGACTACTTTATTTTGTCATCTTGTACAAGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                   ACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTTAGCCTGTTCAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTGACAAGGATGTCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGGCATAAGCACAGGGGGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGATTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAAAGCTGTTTCATTCATCATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCCTGCAATGCAATGGAGA 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAAATCAGCTGACATGGATATGG 1700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TIGGGCAIGCIGAIGGIAIAIGCCACGIAIAIAITIGACAAAICAGCIGACAIGGAIAIGG 1680
                                                                                                                                                                                     AAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGCTTGTAATGAGCGAT
                                                                                                                                                                                                                                            CAAAAATAAATTCATCAGTTCTGAGAGCAAGATTTTGGAGGTTCAGCTTCTCCATGTAAT
                                                                                                                                                                                                                                                                                                 CTTATTGCGGCATCCCGATGGATTATTGATTTTGGGGG-TCCCACTTTCAAATGTGACAC
                                                                                                                                                                                                                                                                                                                                                                              TAGGTGAATATCCTTTTAAGAATGGATTGACTACTTTATTTTGTCATCTTGTACAAGCAT
                                                                                                                                                                                                                                                                                                                                                                                                          ACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTACACGATGGATCTTGCGAGGGCGTGGGCAAGTGGTGAATGGTGACAAGGATGTCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGATTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAAAGCTGTTTCATTCATCATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCAC 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTCTGGGATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTCTGGGATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAAACATATTGTAATGGATGCAAAAATTGATTACCCAGCAGCCTGCAATGCAATGGAGA
                                                                  2549
                                                                ď
                                                                DNA
                                                               linear
                                                   acid
                                                                PAT 28-JUL-1999
                                                   synthase
                                                                                                                                                                                                                                                                                                                                                                                                                                   2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1880
                                                                                                                                                                                                                                                                      2460
                                                                                                                                                                                                                                                                                                 2419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1760
                                                                                                                                                                                                                                            2479
                                                                                                                                                                                                                                                                                                                           2400
                                                                                                                                                                                                                                                                                                                                                     2360
                                                                                                                                                                                                                                                                                                                                                                               2340
                                                                                                                                                                                                                                                                                                                                                                                                          2300
                                                                                                                                                                                                                                                                                                                                                                                                                                                              2240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1940
                                                                                                                                                                                        2539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
JOURNAL
            밁
                                 Ś
                                                                片
                                                                                         8
                                                                                                                   닭
                                                                                                                                          Ś
                                                                                                                                                                          뮍
                                                                                                                                                                                                 δ
                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 2516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
              481
                                                                                                                                                361
                                      481
                                                                421
                                                                                            421
                                                                                                                    361
                                                                                                                                                                           301
                                                                                                                                                                                                   301
                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       strandedness: Double;
CC topology: Linear;
FH Key Lo
FH source 1.
FT CDS /c
FT CDS 99
FT / 99
                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PF PF PN OS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   topology: Linear;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98.2%;
```

```
Oryza sativa
Oryza sativa
Oryza sativa
Oryza sativa
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Burharyota; Viridiplantae; Streptophyta; Embryophyta; Poaceae;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Enrhartoideae; Oryzeae; Oryza.
1 (bases 1 to 2549)
1 (bases 1 to 2549)
1 (bases 1 to 2549)
1 (coacea 2 t
TTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGCAGGTTAAGGAAC
                                                               TTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTA
                                                                                                                                                                                                     ATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATT
                                                                                                                                                                                                                                                                                                                   ATATGTTGTTTAACCAACTGGATGTCTCGTCATCTTCAACTTCTTGTCACCGACAGTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAAGCCACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAAAGCCACAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTTGGAGTGGGGGGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTTGGAGTGGGGGGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGCAGGTTAAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCACTGCAGTTGTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAGGTGGGCACTGCAGTTGTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGAGGAGGAGGCTGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCAAGGTGGGCG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        recaegageagagecreaegcraegaagcegrirceccaregceaegcerceacccercc 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGGCTGCGGCCAAGGCGGCGAGACGTGGGAGAGGGGATTTACAGGTAGAGGGAGAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGGCTGCGGCGAAGGCGGCGAGACGTGGGAGAGGGATTTACAGGTAGAGGGAAGAGGG 60
                                                                                                                                                                                                                                                                                                                                                                                                                           TGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Oryza sativa (rice)

1998057069-A/1

03-MAR-1998

22-AUG-1996 JP 1996221465

YOSHIBA HIROCHIKA, IGARASHI YUMIKO

C12N15/09,C07H21/02,C07H21/04,C12N9/06,C12Q1/68; CC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Oryza sativa"
/mol_type="genomic DNA"
/db_xref="taxon:4530"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                synthase'.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism='Oryza sativa'
/cultivar='akibare'
99. 2249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 2502;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /product='deltal-pyrroline-5-carboxylic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      33; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             180
540
                                                                                                                                                                                                                480
                                                                                                                                                                                                                                                                                                                        480
                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

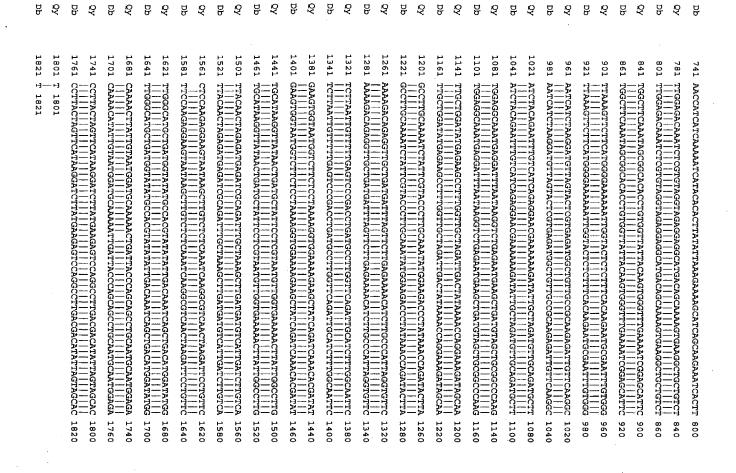
1501 TTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGATGATCTTGATCTTGTCA 1560	41 TGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTG	81 GAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACGATAT 	1321 TCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTC 1380	1261 AAAAGACAGAGGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCATTAGGTGTTC 1320	1201 GCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTA 1260	1141 TTGCTGGATATGAGAAGCCTTTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAA 1200	1081 TGGAGGCAAATGAGGATTTAATAAGGTCTGAGGAATGAAGCTGATGTAGCTGCGGCCCAAG 1140	1021 ATCTACAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGATGTTGCAGATGCTT 1080	961 AATCAICTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGC 1020 	901 TTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACAAGAATGCGAATTTGTGGG 960	841 TGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAAAATCGGAGCATTC 900	781 TTGGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGTGAAAGGCTGCTGTCT 840	721 AACCATCAAAAAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGAAATCACTT 780 	661 AAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTG 720	601 ATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGA 660	541 AAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGG 600
												·				
RESULT 4 AKI 01985 LOCUS DEFINITION ACCESSION VERSION VERSION KEYWORDS SOURCE	B 8	B 8	g Q	B &	}	B &	₽ 22	B 5	음 성	B 성	<u> </u>	B 8	D 5	, 음 청	B 8	Db
_	2521 2521	2461 2461	2401 2401	2341	2281	2221	2161	2101 2101	2041	1981 1981	1921	1861	1801	1741 1741	1681 1681	1621
AK101985 Oryza sativa insert sequen AK101985 AK101985.1 G FLI_CDNA; CAP Oryza sativa	1 ACTAACATCTGTGATTGCACATATACTAA 2549 							TTGGCATA	TATTTCAT			CAAAAGCT			0-0	TIGGGCAT
1821 bp mRNA iva (japonica cultivar-group) « quence. 1 GI:32987194 CAP trapper. iva (japonica cultivar-group)	TGATTGCAC	GTTCTGAGI	TCATCAGIT	ATTCCGATC	CCTTTTAAC	AGTCTTCC	ATCTTGCG	ACACAGGGCTATCCATGCCCGTGGACCAGTGGGTGTGAAGGTCTCTTAA 	GCAAGTACO	GATGATAAC	CAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGATTGTA 	TCATTTCAS	GGAGTTAAS	CATAAGGA1	attgtaatggatgcaaaaactgattacccagcagcctgcaatgcaatggaga 	
1821 la cultiva	CATATACTI CATATACTI	AACTTGTG: ACTTGTG:	CTGAGAG	GATTATTO	AATGGAT	TTTGCAAT	AGGACGTG	rarccargo	BAGATTCTO	GTAGCAG GTAGCAG	FGACCATA:	CATGAGTZ	TATTTATG	CTTATGA	TGCAAAAA TGCAAAAA	ATGCCACG
mR ar-group ar-group	AA 2549 AA 2549	TACCAACG	CAAGATTT CAAGATTT	3ATTTTGG	IGACTACT	GAGGTCAA	GCAAGTG	CCCGTGGA	CTGATGGG	AGACTTTT AGACTTTT	TTCATCGT	ATAGTTCT	GIGGACCI GIGGACCI	AGAGTCCA	CTGATTAC	 TATATATT
A 1	-	CGCTATGT	TGGAGGTT	GGGTTCCC	TATTIC	ATGCTCCT	GTGAATGG	CCAGTGGG	GCTCGTTT GCTCGTTT	CTACGCAG	TATGGAAG TATGGAAG	ATGGCCTG	ATTGCGCA	GGCCTTGA	CCAGCAGC 	
near I		TGCTTGT	CAGCTIC	ACTITION	TCATCTTO	TTTAGCC	TGACAAG	TGTTGAAC	TGGATTGG TGGATTGG	AGTTGATI	FECTCATA 	CACTGTTO	CAAAGCT	CGACATA	CTGCAATO	 AGCTGAC
inear PLN 24-JUL- clone:J033078N24, f		ATGAGCC	CCATGIA	ATGTGAC	TACAAGO	TGTTCAGG	SATGTCGT	GTCTCTT	GIGCIGE	AGTGCTG	ACAGATTO	GAGTTTG	CIGGGAT	TTAGTAG	GCAATGG CAATGG	TGGATAT
UL-2003 , full		64 63	P W	. 1.	, L				<u> </u>	(3(1	42 62	7	-,	11	D-D	

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RS Adachi, J. Aizawa, K. Akimura, T., Arakawa, T., Carninci, P., Doi, K., Fujimura, T., Pukuda, S., Hanagaki, T., Hara, A., Hashizume, W., Hayashida, K., Hayashizaki, Y., Hayatsu, N., Hiramoto, K., Hiraoka, T., Horti, F., Hotta, I., Iida, J., Iida, Y., Ikeda, R., Imamura, K., Imotani, K., Ishibiki, J., Ishii, Y., Ishikawa, M., Itoh, M., Kagawa, I., Katoh, H., Kawagashira, N., Kawaja, J., Kawamata, M., Kikuchi, S., Kishikawa-Hirozane, T., Kishimoto, N., Kobayashi, M., Kodama, T., Kojima, K., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Kurosaki, T., Kusumegi, T., Ii, C., Iu, M., Masuda, H., Matsubara, K., Matsuyama, T., Miura, J., Miyazaki, A., Mirakami, K., Murata, M., Nagata, T., Nakamura, M., Namiki, T., Narikawa, R., Niikura, J., Nishi, K., Nomura, K., Namiki, T., Narikawa, R., Niikura, J., Nishi, K., Oka, M., Ooka, H., Osato, N., Ota, Y., Otomo, Y., Ryu, R., Saitch, H., Sakai, C., Sakai, K., Shinagawa, A., Shiraki, T., Shishiki, T., Sogabe, Y., Sugano, S., Shigata, T., Tayami-Takeda, Y., Yanada, A., Suzuki, K., Suzuki, Y., Tagama, A., Suzuki, Y., Suzuki, Y., Tagama, A., Takahashi, F., Takaku-Akahira, S., Tanaka, T., Tomaru, A., Yoshima, A., Yamamoto, M., Yasunishi, A., Yazaki, J., Yokomizo, S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kikuchi, S., Satch, K., Nagata, T., Kawagashira, N., Doi, K.,
Kishimoto, N., Yazaki, J., Ishikawa, M., Yamada, H., Ooka, H., Hotta, I.,
Kojima, K., Namiki, T., Ohneda, E., Yahagi, W., Suzuki, K., Li, C.,
Ohtsuki, K., Shishiki, T., Foundation of Advancement of International
Science Genome Sequencing & Analysis Group:, Cromo, Y., Murakami, K.,
Iida, Y., Sugano, S., Fujimura, T., Suzuki, Y., Tsunoda, Y.,
Kurosaki, T., Kodama, T., Masuda, H., Kobayashi, M., Xie, Q., Lu, M.,
Narikawa, R., Sugiyama, A., Mizuno, K., Yokomizo, S., Nikura, J.,
Kusumegi, T., Oka, M., Ryu, R., Ueda, M., Matsubara, K., RIKEN;
Kusumegi, T., Oka, M., Ryu, R., Ueda, M., Matsubara, K., RIKEN;
Kusumegi, T., Oka, M., Ryu, R., Ueda, M., Matsubara, K., Fukuda, S.,
Hara, A., Hashidume, W., Hayatsu, N., Imotani, K., Ishii, Y., Ttoh, M.,
Kagawa, I., Kondo, S., Konno, H., Miyazaki, A., Osato, N., Ota, Y.,
Saito, R., Saski, D., Sato, K., Shibata, K., Shinagawa, A., Shiraki, T.,
Yoshino, M. and Hayashizaki, Y., Shibata, K., Shinagawa, A., Shiraki, T.,
The control of t
FAIS Genome Sequencing & Analysis Group: Otomo,Y., Iida,Y.,
Fujimura,T., Ikeda,R., Ishibiki,J., Kawamata,M., Kobayashi,M.,
Kodama,T., Kurosaki,T., Kueumegi,T., Lu,M., Masuda,H., Miura,J.,
Mizuno,K., Narikawa,R., Nikura,J., Oka,M., Ryu,R., Sugano,S.,
Sugiyama,A., Suzuki,Y., Tsunoda,Y., Ueda,M., Xie,Q., Yokomizo,S.,
Sugiyama,A., Mateubara,K., and Murakami,K.
Yoshimura,A., Mateubara,K. and Murakami,K.
Genome Exploration Research Group in Riken Genomic Sciences Center
and Genome Science Laboratory in Riken: Adachi,J., Aizawa,K.,
Akimura,T., Arakawa,T., Carninci,P., Fukuda,S., Hanagaki,T.,
Akimura,T., Arakawa,T., Carninci,P., Fukuda,S., Hanagaki,T.,
Akimura,T., Arakawa,T., Carninci,P., Fukuda,S., Hanagaki,T.,
Akimura,T., Arakawa,T., Carninci,P., Fukuda,S., Haramoto,K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         URL: http://cdma01.dna.affrc.go.jp/cDNA/
NIAS Rice Full-Length CDNA Project Team: Kikuchi,S., Satoh,K.,
Nagata,T., Kawagashira,N., Doi,K., Kishimoto,N., Yazaki,J.,
Ishikawa,M., Yamada,H., Ooka,H., Hotta,I., Kojima,K., Namiki,T.,
Chneda,E., Yahagi,W., Suzuki,K., Li,C., Ohtsuki,K., Shishiki,T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (27-AUG-2002) Shoshi Kikuchi, National Institute of Submitted (27-AUG-2002) Shoshi Kikuchi, National Institute of Agrobiological Sciences, Department of Molecular Genetics, Head of Laboratory of Gene Expression; 2-1-2 Kannondai, Tsukuba, Ibaraki 305-8602, Japan (B-mail:skikuchi@nias.affrc.go.jp, Tel:81-29-838-7007, Fax:81-29-838-7007)
This clone is one of the 28K full-length cDNA clones from japonica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oryza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Collection, mapping, and annotation of over 28,000 cDNA clones from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The Rice Full-Length cDNA Consortium, National Institute of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Agrobiological Sciences Rice Full-Length cDNA Project Team:,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 1821)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and
                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
```

```
Best Local Sin
Matches 1798;
721 AACCATCAGAAAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGAAATCACTT 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hiraoka, T., Hori, F., Iida, J., Imamura, K., Imotani, K., Ishii, Y., Itch, M., Kagawa, I., Kanagawa, S., Katoh, H., Kawai, J., Kishikawa-Hirozane, T., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, A., Murata, M., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, R., Ohno, M., Osato, N., Ota, Y., Saitoh, H., Sakai, K., Nomura, K., Numasaki, R., Ohno, M., Osato, N., Saitoh, H., Sakai, K., Sakazume, N., Sano, H., Sasaki, D., Sato, K., Shibata, K., Shinagawa, A., Shiraki, T., Sogabe, Y., Tagami, M., Tagami, Takeda, Y., Tagawa, A., Takahashi, F., Takaku-Akahira, S., Tanaka, T., Tomaru, A., Toya, T., Waki, K., Yasunishi, A. and Hayashizaki, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                        AAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTG 740
                                                                                                                                                                                  AAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTG 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAGGTGGGCACTGCAGTTGTCTCCA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGGCTGCGGCGAAGGCGGCGAGACGTGGGAGAGGGATTTACAGGTAGAGGGAGAGGG 80
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGGCTGCGGCGAAGGCGGAGACGTGGGAGAGGGATTTACAGGTAGAGGGAGAGGG 60
                                                                                                                                                                                                                                                                                 ATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGG 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATT 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAAAGCCACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAAGCCACAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTTGGAGTGGGGGCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAACTCTTTTAGGATACGAAGTGATTTTTGGTCACCTCAGGTGCTGTTGGAGTGGGGGCGAC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGCAGGTTAAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGCAGGTTAAGGAAC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAGGTGGGCACTGCAGTTGTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGAGGAGAGAGCTGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCGACCCGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGAGGAGGAGGCTGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCGACCCGTCCC 120
                                                                                                                                                                                                                                                                                                                                                            ATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGA 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Oryza sativa (japonica cultivar-group)"
/mol_type="m&NA"
/cultivar="m&Naponbare"
/db_xref="taxon:39947"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone="J033078N24"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       70.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1796.2;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 8; Length 1821;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ω
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                      680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       140
                                                                                                                                                                                                                                                                                                                                                                                                                                           620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    260
```

SOURCE

VERSION



```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RS Adachi, J., Rizawa, K., Akimura, T., Arakawa, T., Carninci, P., Doi, K., Ryimura, T., Fukuda, S., Hanagaki, T., Haza, A., Hashizume, W., Hayashida, K., Hayashizaki, Y., Hayatsu, N., Hiramoto, K., Hiraoka, T., Horil, F., Hotta, I., Iida, J., Iida, Y., Ikeda, R., Imamura, K., Horil, F., Hotta, I., Iida, J., Ishi, Y., Ikeda, R., Imamura, K., Katoh, H., Kawagashira, N., Kawaja, J., Kabhikki, J., Ishi, Y., Ishikawa, M., Itoh, M., Kagawa, I., Katoh, H., Kawagashira, N., Kawaja, J., Kawamata, M., Kodama, T., Kojima, K., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Kodama, T., Kojima, K., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Kurosaki, T., Kusumegi, T., Li, C., Lu, M., Masuda, H., Matsubara, K., Matsuyama, T., Miura, J., Miyazaki, A., Mainiki, T., Narikawa, R., Niikura, J., Nishi, K., Noka, M., Ooka, H., Namiki, T., Narikawa, R., Niikura, J., Nishi, K., Noka, M., Ooka, H., Namiki, T., Narikawa, R., Niikura, J., Nishi, K., Nakamura, K., Namiki, T., Sano, H., Sasaki, D., Sato, K., Satoh, K., Sahbata, K., Shinagawa, A., Shiraki, T., Shishiki, T., Sogabe, Y., Sugano, S., Sugano, S., Sugana, A., Takahashi, F., Takaku-Akahira, S., Tanaka, T., Tomaru, A., Yoshi, P., Takaku-Akahira, S., Yahagi, W., Yanada, H., Yamamoto, M., Yasunishi, A., Yazaki, J., Yokomizo, S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Science Genome Sequencing & Analysis Group:, Otomo, Y., Murakami, K., Inda, Y., Sugano, S., Fujimura, T., Suzuki, Y., Teunoda, Y., Kurosaki, T., Kodama, T., Masuda, H., Kobayashi, M., Xie, Q., Lu, M., Narikawa, R., Sugiyama, A., Mizuno, K., Yokomizo, S., Niikura, J., Ikeda, R., Ishibiki, J., Kawamata, M., Yoshimura, A., Miura, J., Ikeda, R., Ishibiki, J., Kawamata, M., Yoshimura, A., Miura, J., Kusumegi, T., Oka, M., Ryu, R., Ueda, M., Matsubara, K., RIKEN, Kawai, J., Carninci, P., Adachi, J., Aizawa, K., Arakawa, T., Fukuda, S., Kawai, J., Carninci, P., Adachi, J., Imotani, K., Ishi, Y., Itoh, M., Kagawa, I., Kondo, S., Konno, H., Miyazaki, A., Osato, N., Ota, Y., Salto, R., Sasaki, D., Sato, K., Shibata, K., Shinagawa, A., Shiraki, T., Yoshino, M. and Hayashizaki, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Cryza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
URL: http://cdna01.dna.affrc.go.jp/cDNA/
NIAS Rice Full-Length cDNA Project Team: Kikuchi,S., Satoh,K.,
Nagata,T., Kawagashira,N., Doi,K., Kishimoto,N., Yazaki,J.,
Ishikawa,M., Yamada,H., Ooka,H., Hotta,I., Kojima,K., Namiki,T.,
Ohneda,E., Yahagi,W., Suzuki,K., Li,C., Ohtsuki,K., Shishiki,T. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (27-AUG-2002) Shoshi Kikuchi, National Institute of Agrobiological Sciences, Department of Molecular Genetics, Head of Laboratory of Gene Expression; 2-1-2 Kannondai, Tsukuba, Ibaraki 305-8602, Japan (E-mail:skikuchi@nias.affrc.go.jp, Tel:81-29-838-7007, Fax:81-29-838-7007)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            japonica rice
Science 301 (5631), 376-379 (2003)
22752273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The Rice Full-Length cDNA Consortium, National Institute of Agrobiological Sciences Rice Full-Length cDNA Project Team:, Kikuchi,S., Satch,K., Nagata,T., Kawagashira,N., Doi,K., Kishimoto,N., Yazaki,J., Ishikawa,M., Yamada,H., Ook,H., Hotta,I., Volin, Vo
                                                                                                                                                                                                                                                                                                                                                                                                      This clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Collection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kojima,K., Namiki,T., Ohneda,E., Yahagi,W., Suzuki,K., Li,C., Ohtsuki,K., Shishiki,T., Foundation of Advancement of International
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FLI_CDNA; CAP trapper.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           insert sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Oryza sativa (japonica cultivar-group) cDNA clone:J033031H21,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AK101230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 2739)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    230.1
                                                                                                                                                                                                                                                                                                                                                                                                                    is one of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mapping, and annotation of over 28,000 cDNA clones from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GI:32986439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2739 bp
                                                                                                                                                                                                                                                                                                                                                                                                      28K full-length cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                    clones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLN 24-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                           from
                                                                                                                                                                                                                                                                                                                                                                                                             japonica
```

COMMENT

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 1674;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in Riken Adachi, J., Alzawa, K., Akimura, T., Arakawa, T., Carninci, P., Fukuda, S., Hanagaki, T., Hara, A., Hashizume, W., Hayashida, K., Hayateu, N., Hiramoto, K., Hiramoto, T., Hori, F., Iida, J., Imamura, K., Imotani, K., Ishii, Y., Itoh, M., Kagawa, I., Kanagawa, S., Katoh, H., Kawai, J., Kishikawa-Hirozane, T., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, A., Murata, M., Nakamura, M., Nishi, K., Nomura, X., Numasaki, R., Ohno, M., Osato, N., Ota, Y., Saltoh, H., Sakai, C., Sakai, K., Sakazume, N., Sano, H., Sasaki, D., Sato, K., Shibata, K., Shinagawa, A., Shiraki, T., Sogabe, Y., Tagami, M., Tagami-Takeda, Y., Tagawa, A., Takahashi, F., Takaku-Akahira, S., Tanaka, T., Tomaru, A., Toya, T., Waki, K., Yasunishi, A. and Hayashizaki, Y.
                                                          636
                                                                                                                                                                                                                                                                                                                                                            605
                                                                                                                                                                                                                                                                                                                                                                                                                      456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    365
                                                                                                                                                                                                                                           665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         96 GCCATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FAIS Genome Sequencing & Analysis Group: Otomo,Y., Iida,Y.,, Fujimura,T., Ikeda,R., Ishibiki,J., Kawamata,M., Kobayashi,M., Kodama,T., Kurosaki,T., Kusumegi,T., Lu,M., Masuda,H., Miura,J., Mizuno,K., Narikawa,R., Nikura,J., Oka,M., Ryu,R., Sugano,S., Sugiyama,A., Suzuki,Y., Tsunoda,Y., Ueda,M., Xie,Q., Yokomizo,S., Yoshimura,A., Matsubara,K. and Murakami,K.
                                                                                                                                                                                                                                                                                                                                                                                                CAACTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAA 515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGTCGGCACCGCTGTTGTCACTGGGCCGAATGGCCGGTTGGCTATGGGCAGGCTCGGT
GCCAGACTGTTAGCGCAAGAACTTAAAGCTGATCTCCTTATCATGCTCAGTGATGTGGAG 844
                                                   GCAGGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGAT 695
                                                                                                                                                                                                                                                                                            ACTGTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGAGTGTGCTGATGGCGATCTATGACACGTTATTTAGCCAGCTTGACGTAACATCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGAGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCAGGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTCTGTGTGAACAGGTGAAGCAGCTAAATTTTGAGGGGTACGAGGTGATTCTGGTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGA 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACGTGGAGACACCGACCCGCGCGCTTCGTCAAGGACGTGAAGCGCATCATCATC
                                                                                                                    AGTACCAGGAGGCAACCATACGAGGATTCATCTGGCATATTCTGGGATAACGATAGTTTG
                                                                                                                                                                              AGCACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTA 635
                                                                                                                                                                                                                                                                                                                                                            CAGCTTCTTGTTACGGATCGTGATTTTATGGATCCAAGTTTTGGGAACCAGCTCCGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTGCTGATCTGCAAAAGCCACAGATGGAGTTAGATGGAAAAGGCTTGTGCCGCTGTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTGGTGCTGTTGGTTTGGGAGGCAGAGGCTCAAGTACCGGAAGCTCGTCAATAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Oryza sativa (japonica cultivar-group)"
/mol type="mRNA"
/cultivar="Nipponbare"
/db xref="taxon:39947"
/clone="J033031H21"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    54.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches 489; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1380.6;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                         664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         155
                                                                                                                                                                                                                                                                                                  575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    424
                             밁
                                                                             8
                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ঠ
                             1865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        696
                             CCAGCAGCGTGTAATGCCATGGAAACGTTACTTGTTCATAAAGATCTGAACAGGACAGAA 1924
                                                                                CCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCA 1775
                                                                                                                                                 GACAAATCAGCTGACATGGACATGGCAAAACGTATTGTATTGGACGCAAAGGTTGATTAT 1864
                                                                                                                                                                                                        GACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTAC 1715
                                                                                                                                                                                                                                                                     AAAGCAGCAACCAAGATTCCTGTTCTTGGTCATGCTGACGGTATCTGCCATGTTTATATT 1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTACAGATTGCATCTTTAGCAATCCGAAGTGGAAATGGTCTTCTCTTGAAAGGAGGAAAA 1564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCCTAAAAGGTGGAAAA 1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAAACATCTTGCCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCCTG 1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCATAAAGCCAGGAAAAGATAAAAAGCCTCGCAGGATCAATTCGTGAAATCGCTGATATG 1384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTG 1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTGCTGCAAGAGATTGCTCCAGACATCTACAGAAATTGTCGTCTGAGGAGCGTAAGAAG 1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTGCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACAGCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACA 875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAACAACATGGGAAGTTAATTAGCTTTTGGGGAGAAATCTCGTGTGGGAAGAGGTGGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGTTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAA 755
                                                                                                                                                                                                                                                                                                                     AAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCCACGTATATATT 1655
                                                                                                                                                                                                                                                                                                                                                                                         CTTGATGATGATTGATCTTGTAATACCAAGAGGTAGCAATAAGCTCGTTTCCCAGATC 1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATC 1595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTGGTAAAAAACTTATTGGCCTAGTGAAAAAACAAAGATGAAATTGCTGATTTGCTCAAG 1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAG 1535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAGCTATGAGATCAAACACAATACTGCATAAGGTCATAACTGGTGCAAATTCCAGATGTT 1624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAAT 1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGGACCCTATTTCCCATACACTGAAAAGAACAGAGGTTGCTAAAGATCTTGTTTTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAG 1295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTATAAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCCTTGCAAATATG 1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAGCTGATCTGGATTTGGCGCAAGATATTGGTTACGATAAATCATTGGTTGCTCGGATG 1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAAT 1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TICCATAGGGAAGCAAACCAGTGGGGTTGTTCCAAGGAAGCAACAGCGCGTGAGATGGCC 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTGGATTTGCAATCGATAGCATTATTAAAGGTCATGCGAGGAGAAAAATCGGTACGCTT 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTGGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTC 935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGCTAAAGTAGCAGCTGCTTTTACTGCTTCATCAAAAGGAATACCTGTTGTAATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAACATATTGCCCATTGGGTGTTCTCCTAATTATTTTTGAGTCCCGTCCTGATGCCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTTTGCTAGACATCGCCGATGCTCTAGAAGCAAAATGAAGATCTAATTACATCCGAGAAC 1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTCACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCT 995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       964
```

S 맑 Ś 片 Ś 밁 Ś 밁 δ 밁 Ś 밁 Ś 밁 Ś 밁 Ś 뭐 δ

```
RESULT 6
AK069425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                          JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
PUBMED
                                                                                                                                                                                                                Kikuchi, S., Satoh, K., Nagata, T., Kawagashira, N., Doi, K.,
Kishimoto, N., Yazaki, J., Ishikawa, M., Yanada, H., Ooka, H., Hotta, I.,
Kojima, K., Namiki, T., Ohneda, E., Yahagi, W., Suzuki, K., Li, C.,
Ohtsuki, K., Shishiki, T., Foundation of Advancement of International
Science Genome Sequencing & Analysis Group:, Otomo, Y., Murakami, K.,
Iida, Y., Sugano, S., Fujimura, T., Suzuki, Y., Tsunoda, Y.,
Kurosski, T., Kodama, T., Wasuda, H., Kobayashi, M., Xie, Q., Lu, M.,
Narikawa, R., Sugiyama, A., Mizuno, K., Yokomizo, S., Niikura, J.,
Ikeda, R., Ishibiki, J., Kawamata, M., Yoshimura, A., Mira, J.,
Kusumeqi, T., Oka, M., Ryu, R., Ueda, M., Matsubara, K., RIKEN:,
Kawai, J., Carninci, P., Adachi, J., Aizawa, K., Arakawa, T., Fukuda, S.,
Hara, A., Hashidune, W., Hayatsu, N., Imotani, K., Ishii, Y., Itoh, M.,
Kagawa, I., Kondo, S., Konno, H., Miyazaki, A., Osato, N., Ota, Y.,
Saito, R., Sasaki, D., Sato, K., Shibata, K., Shinagawa, A., Shiraki, T.,
Yoshino, M. and Hayashizaki, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1896 ATGGCCTGCACTGTTGAGTTTGATGATGTTCAATCAGCAATTGACCATATTCATCGT 1955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1836 ATTGCGCACAAAGCTCTGGGATTTCCAAAAGCTGTTTCATTTCATCATGAGTATAGTTCT 1895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2256 ATG 2258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2076 GCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGA 2135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The Rice Full-Length cDNA Consortium, National Institute of Agrobiological Sciences Rice Full Length cDNA Project Team:,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AK069425.1 GI:32979449
FLI_CDNA; CAP trapper.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Oryza sativa (japonica cultivar-group) cDNA clone:J023019K03, full
                                                                                     japonica rice
Science 301 (5631), 376-379 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              insert sequence
                                                                                                                                                                                                Collection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGAATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAA 2255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGAACGGCGACAAGGGAGTTGTTTACACCCACAGGGAGCTCCCTTTGCAGTGAGGTGAA 2404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCAGTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTG 2195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTACAGCAAGTTGATAGTGCTGCGGTATTCCATAATGCAAGCACACGGTTCTGTGATGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATGGAAGTGCACACAGATTGCATTATCACTACTGATGGAAAGGCAGCAGAGACTTTT 2164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTT 2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGGCATGCACCCTCGAATTTGTTGATGATGTGCAGTCAGCAATTGACCATATAAATCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTGCACATGACACTTTGAAACTACCAAAGGTAGATTCATTTCATCATGAGTATAACTCA 2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCCTTGACGATTTATTGGTGGAGCTTGAAAAGGAAGGGGTAGTTATCTATGGCGGGCCT 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ессттенсенсититтнетнестиненавання в принципальност по в принце пр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GI:32979449
                                                                                                                                                                                     mapping, and annotation of over 28,000 cDNA clones from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3386 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TURNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PLN 24-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2224
                                                묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                Matches 1673;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                     96 GCCATGGCGAGCGTCGGCCGGAGCTTCGTGAGGGAACGTGAAGCGCGTCATCATC 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
                                          GACGÍGGAGAACACCGACTCCACCGGGGCTTCGTCAAGGACGTGAAGCGCATCATCATC 248
                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Oryza sativa
/mol_type="mRNA"
/cultivar="Nipponbare"
/db_xref="taxon:39947"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 clone="J023019K03"
                                                                                                                                                                                                                                                                                      54.1%;
                                                                                                                                                                                                                                           0; Mismatches 490;
```

```
CE 2 (bases 1 to 3386)

RS Adachi J., Aizawa, K., Akimura, T., Arakawa, T., Carninci, P., Doi, K., Pujimura, T., Fukuda, S., Hanagaki, T., Hara, A., Hashizume, W., Hayashida, K., Hayashizaki, Y., Hayatsu, N., Hiramoto, K., Hiraoka, T., Hayishida, K., Hayashizaki, Y., Ishia, Y., Ishikawa, M., Itoh, M., Kagawa, I., Indini, K., Ishibki, J., Ishii, Y., Ishikawa, M., Itoh, M., Kagawa, I., Katoh, H., Kawagashira, N., Kawai, J., Kawamata, M., Kanagawa, S., Katoh, H., Kawagashira, N., Kawai, J., Kawamata, M., Kodama, T., Kojima, K., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Kodama, T., Kojima, K., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Kodama, T., Kojima, K., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Kurosaki, T., Kusumegi, T., Li, C., Lu, M., Mizuno, K., Murakami, K., Matsuyama, T., Miura, J., Miyazaki, A., Mizuno, K., Murakami, K., Matsuyama, T., Nishi, K., Nomura, K., Namiki, T., Narikawa, R., Niikura, J., Nishi, K., Nomura, K., Numasaki, T., Ohneda, E., Ohno, M., Ohtsuki, K., Oka, M., Ooka, H., Osako, N., Ota, Y., Otomo, Y., Ryu, R., Saitch, H., Sakai, C., Sakai, K., Sakazume, N., Sano, H., Sasaki, D., Satoh, K., Satoh, K., Shibata, K., Sugano, S., Sugiyama, A., Shiraki, T., Shishiki, T., Tagami, T., Takeda, Y., Yamada, A., Tshahashi, F., Takaku-Akahira, S., Tanaka, T., Tomaru, A., Yamada, H., Yamamoto, M., Yasunishi, A., Yazaki, J., Yokomizo, S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PAIS Genome Sequencing & Analysis Group: Otomo, Y., Iida, Y., Fujimura, T., Ikeda, R., Ishibiki, J., Kawamata, M., Kobayashi, M., Kodama, T., Kucosaki, T., Kusumegi, T., Lu, M., Masuda, H., Miura, J., Oka, M., Ryu, R., Sugano, S., Sugiyama, A., Suzuki, Y., Tsunoda, Y., Ueda, M., Xie, Q., Yokomizo, S., Sugiyama, A., Suzuki, Y., Tsunoda, Y., Ueda, M., Xie, Q., Yokomizo, S., Sugiyama, A., Suzuki, Y., Tsunoda, Y., Ueda, M., Xie, Q., Yokomizo, S., Sugiyama, A., Suzuki, Y., Tsunoda, Y., Ueda, M., Xie, Q., Yokomizo, S., Senome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in Riken Adachi, J., Alzawa, K., Akimura, T., Arakawa, T., Carninci, P., Fukuda, S., Hanagaki, T., Akimura, T., Hayatsu, N., Hiramoto, K., Hara, A., Hashizume, W., Hayashida, K., Hayatsu, N., Hiramoto, K., Harao, A., Hashizume, W., Hayashida, K., Imotani, K., Ishii, Y., Itoh, M., Kagawa, I., Kanagawa, S., Katoh, H., Kawai, J., Kishikawa-Hirozane, T., Kojima, Y., Kondo, S., Konno, H., Kouda, M., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, A., Murata, M., Nakamura, M., Nishi, K., Nomura, K., Nimasaki, R., Ohno, M., Osato, N., Sasaki, D., Satoh, H., Sakai, C., Sakai, K., Sakazume, N., Sano, H., Sasaki, D., Satoh, H., Tanaka, T., Tomaru, A., Toya, T., Waki, K., Yasunishi, A., and Hayashizaki, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (05-DEC-2001) Shoshi Kikuchi, National Institute of Agrobiological Sciences, Department of Molecular Genetics, Head of Laboratory of Gene Expression; 2-1-2 Kannondai, Tsukuba, Ibaraki 305-8602, Japan (E-mail:skikuchi@nias.affrc.go.jp, Tel:81-29-838-7007, Fax:81-29-838-7007)
This clone is one of the 28K full-length cDNA clones from japonica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NIAS Rice Full-Length cDNA Project Team: Kikuchi S., Satoh,K., Nagata,T., Kawagashira,N., Doi,K., Kishimoto,N., Yazaki,J., Ishikawa,M., Yamada,H., Ooka,H., Hotta,I., Kojima,X., Namiki,T., Ohneda,B., Yahagi,W., Suzuki,K., Li,C., Ohtsuki,K., Shishiki,T. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           URL : http://cdna01.dna.affrc.go.jp/cDNA/
                                                 Score 1379;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (japonica cultivar-group)"
                                                                                                         DB 8;
                                                                                                   Length 3386;
0,
```

л. т. 7	RESULT	DY 1236 GAAGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAG 1295
2256 ATG 2258 2349 GTG 2351	D QY	OY 1176 ACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATG 1235
	da.	OY 1116 GAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTG 1175
CCTGTTGGCGTTGATGACTCCTAACAACTCGATGACATTTTACGAGGAAGTGGACAAGTA	5 B 8	Qy 1056 ATATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAAT 1115
20/6 GCICGITITIGGATIGGGIGAGGTIGGCAFAAGGGGGAFACATIGCCCGAFACA 2133	? B &	QY 996 GTTGCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAG 1055
CTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTAGGAGATTCTCTGATGGG	B &	OY 936 TTTCACAAGAATGCGAAGTTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCT 995
TATGARATGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGATTTT	d dd	Qy 876 AGTGGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAAATTGGTACTCTC 935
896 ATGGCCTGCACTGTTGAGTTTGTTGATGATGATCAATCAGCAATTGACCATATTCATCGT 	da dy	Oy 816 ACAGCAAAAGTGAAGGCTGCTGTTTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACA 875
S ATTGCGCACAAAGCTCTGGGATTTCCAAAACCTGTTTCATTTCATTCA	D Q	Qy 756 GAAAAGCATCAGCAAGAAATCACCTTTTGGAGAAATCTCGTGTAGGTAG
GGCCTTGACGATTATTAGTGAGCCTTAAAAACAGAAGGAGTTAATATITATIGGTGAGCCT	, p &	OY 696 GGGTTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATATA
CCAGCAGCCIGCAAIGCAAIGCAAGACCTIACTAGTICAIAAGAGTCTAIGAAGAGGCCAGCAGAGAGGCCAGAGAGGCCAGAAGAGGCCAGAGAGGCCAGAAAGAGGCCAGAAAGAGGCCAGAAAGGCCAGGAAAAGGTTACTTATAAAGATCTGAACAGGACAGAA) B 8	Qy 636 GCAGGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGAT 695
GACADATCAGCTGACATGGATATGGCADAACTTATTGTAATGATGCADAACTGATTAT	S & &	OY 576 AGCACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTTCTGGGATAATGACAGTTTA 635
596 AAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGATATATGCCAAGGTATATATT	D	Oy 516 ACTGTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTTAATGAAAATGAGCCATC 575
CTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAATCC	9d 6y	Qy 456 CAACTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGGCAACTCACTGAA 515
GTTGGTAAAAACTTATTGGCCTAGTGAAAAACAAAGATGAAATTGCTGATTTGCTCAAG	4g	Qy 396 CAGAGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCT 455
GAAGCTATCAGATCAACACGATATTGCATAAAGGTTATAACTGATGCTATTCCTCGTAAT	? B &	Qy 336 TITGCTGATCTGCAAAAGCCACAGATGGACTTAGATGGAAAGGCTTGTGCCGCTGTTGGT 395
GINCAGATIGCAICITIGGAAITICGAAGIGGIAATGGICTTCTCTCTAAAAGGTGGAAAAAGTGGAAAAGGTCGAAAGTGGAAAAGGTCTTCTCTCTTGAAAGGAGGAAAAAGGTAAAAAGGTCTAAAGGAAGG	рь с ў	QY 276 TCAGGTGCTGTTGGAGTGGGGGGGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGC 335
, φ σ	, מם עץ	Qy 216 GCTCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACC 275
	\$ B	Oy 156 AAGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGA 215

456

426

486

546

999 756 606 696

```
JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                 Ś
                                                                           8
                                                                                                             Ś
                                                                                                                                                       밁
                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                   멼
                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LOCUS
DEFINITION
멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADU92286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Simi
Matches 1558;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
247
                                     337
                                                                           187
                                                                                                                 277
                                                                                                                                                       127
                                                                                                                                                                                             217
                                                                                                                                                                                                                                                                             157
                                                                                                                                                                                                                                       67
                                                                                                                                                                                                                                                                                                                                                       97 CCATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCA 156
                                                                                                                                                                                                                                                                                                                     7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         without hydrogen cyanamide treatment Physiol. Plantarum 102, 171-178 (1998)
2 (bases 1 to 2378)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids; Ericales; Actinidiaceae; Actinidia.

1 (bases 1 to 2378)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADU92286 2378 bp mRNA linear PLN 22-APR-1998 ACtinidia deliciosa pyrroline-5-carboxylate synthetase mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (06-MAR-1997) HortResearch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Regulation of proline biosynthesis in kiwifruit buds with and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Walton, E.F., Podivinsky, E., Wu, R.-M., Reynolds, P.H.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Actinidia deliciosa
Actinidia deliciosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        U92286.1 GI:1928959
                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Walton, E.F., Podivinsky, E., Wu, R.-M., Reynolds, P.H.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            complete cds.
                           TTGCTGATCTGCAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTC
                                                                                                                                                         CACTTTGTGAGCAGATTCATGAACTGAATTCTCAAGGATTTGAGGTTATTTTGGTTACAT
                                                                                                                                                                                               CTCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCT
                                                                                                                                                                                                                                                                         AGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAG
                                                                                                                                                                                                                                                                                                                   CAATGGACGCAGTCGATTCAACGCGAGCGTTCGTCAAAGGCGTGAAGCGTGTCATCATCA
TTGCTGACCTCCAAAAGCCACAAATTGAACTTGATGGGAAGGCATGTGCAGCTGTTGGGC
                                                                             CAGGTGCTGTTGGTCGCCGCCAACGGTTAAGATACCGGAAATTGGTCAACAGCAGCT
                                                                                                                 CAGGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCT
                                                                                                                                                                                                                                     AGGTTGGGACTGCTGTTGTCACTCGAGCTGATGGAAGACTGGCACTTGGAAGACTTGGAG
                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEMFEGLITFGDKSRVGGGMTAKVKAAVYAAHAGIPVTITSGYATNNI KTULGGEI I
GTLFHEDAGKWAPVGDVGARDMAVAARESSRILGAMSPODRSKILLDVADALEANEKL
IRIENEADLAAAAQOAGYEKSI ISRLALKSGKISSLAKSIRVLLAWBEDIGHVLKRTEI
TDGLVLEKTSSPLGVLLIIFEBREDALVQIASLAIRSGGLVLKGGKEAKRSMAILHK
VITSAIPENVGPRLIGLVTSREEIPDLLKLDDVIDLVIPRGSNKLVSQIKESTKIPVL
GHADGICHVYUDKSANMDMAKKVVLDAKTDYPAACNAMETILVHKDLVQNGCLDELIV
ELQIKGVVIHGGPRASSLLHIPEBARSLAHESVSSLACTIEIUDDVYAAIDHIHRHGSAH
TDSIITEDHEVABIFLRGVDSSSVLHABASTRFSDGARFGLGAEVGISTSRIHARGPVG
VEGLLTTRWIARGSGQVVDGDKGIVYTHKDLTSHA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Actinidia deliciosa"
/mol_type="mRNA"
/db_xref="taxon:3627"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    tissue_type="axillary bud"
                                                                                                                                                                                                                                                                                                                                                                                                             47.2%;
72.5%;
                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                             Score 1203.4; DB 8;
Pred. No. 5.5e-289;
0; Mismatches 591;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Private Bag 3123, Hamilton,
                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 2378;
                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                       396
                                                                             246
                                                                                                                   336
                                                                                                                                                         186
                                                                                                                                                                                               276
                                                                                                                                                                                                                                       126
                                                                                                                                                                                                                                                                           216
                                                                                                                                                                                                                                                                                                                   66
                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                     밁
                                                Ş
                                                                                              문
                                                                                                                                  Ś
                                                                                                                                                                            B
                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                      1087
                                                                                                                                                                                                                                                                                                                                                                          1177
                                                          1417
                                                                                                1267
                                                                                                                                                                              1207
                                                                                                                                                                                                                  1297
                                                                                                                                                                                                                                                          1147
                                                                                                                                                                                                                                                                                                                                                                                                                    1027
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1117
                                                                                                                                                                                                                                                                                                1237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GIGGGTTTGAAAAICGGAGCATTCTTAAAGTTCTTCAIGGGGAAAAAAITTGGTACTCTCT
                     AGGCTAAAAGATCTAATGCAATCTTGCACAAGGTTATTACTTCTGCCATCCCTGAAAATG 1386
                                                  AAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATG 1476
                                                                                                                                                                                                                  AAACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGG 1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGA 1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATG 1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTGCAGCTAGGGAGAGTTCCAGACGACTACAGGCCATGTCTCCGCAAGATAGGAGTAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCACCAGGAAAGCTCCATATGAGGACGCTTCTGGTATATTCTGGGATAATGACAGTTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCA 576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAATGGTCTATTGGCTCTCTATGATACATTGTTTAGTCAGCTGGATGTGACATCAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTC
                                                                                                rrcagarrgcarcrrregcaarrcgaagrggraarggrerrercrecraaaaggrggaaaag
                                                                                                                                                                            AGACATCATCTCCCTTGGGTGTTCTCCTGATTATTTTTGAGTCTCGACCAGATGCGCTAG 1266
                                                                                                                                                                                                                                                        AAGAGCCCATTGGTCATGTTTTGAAGAGAACTGAGATTACAGATGGACTGGTCTTAGAGA
                                                                                                                                                                                                                                                                                              AAGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGA 1296
                                                                                                                                                                                                                                                                                                                                      CTCTAAAGTCTGGGAAGATTTCAAGTCTTGCAAAATCAATTCGCGTGCTTGCGAACATGG 1146
                                                                                                                                                                                                                                                                                                                                                                            CTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGG
                                                                                                                                                                                                                                                                                                                                                                                                                  AAGCTGATCTCGCTGCTGCACAGCAGGCTGGCTATGAAAAGTCATTGATATCTCGTCTAG 1086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTTGCTTGACGTGGCTGATGCCTTAGAAGCAAATGAAAACTGATCAGAATAGAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCATCGAGATGCACAGAAATGGGCTCCAGTGGGAGATGTTGGTGCACGGGACATGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGGCTATGCTACGAACAATATCATAAAAGTACTTCAAGGAGAGCGTATTGGTACCCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGCCAAAGTAAAAGCTGCTGTTTATGCAGCCCATGCTGGCATCCCTGTTGTTATCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAATGTTTGAGGGACTGATTACTTTTGGGGACAAATCCAGGGTGGGAAGAGGGGGGCATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTTTATAGCGGCCCACCAAGTGATCCACAGTCAAAGTTGATCCACACTTACATTAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGCTCTATTAGCTTTGGAGCTAAAGGCTGACCTTCTTGTCCTTCTGAGTGATGTGGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGGACTGTTGGCACTGGAAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGTAGAATCACTATTGAATTTGAAGGTGATCCCAATATTTAATGAAAAATGATGCTGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCTACTCGTTACTGATAATGATTTTTAGGGATCCAGAATTCAGGAAGCAACTTACTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTTCTTGTCACCGACAGTGATTTTGAGAACCCCAAAGTTCCCGGGAGCAACTCACTGAAA 516
```

966

1206

1416

996

906

936 786 876 726

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                  RESULT 8
AF067967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  श्
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                    TITLE
        AUTHORS
                                              JOURNAL
                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1567
                                                                       Mesembryanthemum crystallinum Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Spermatophytales; Alzoaceae; Mesembryanthemum.

1 (bases 1 to 2992)

Michalowski, C.B., Quigley-Landreau, F. and Bohnert, H.J.

Mesembryanthemum crystallinum pyrroline-5-carboxylate synthetase
                                                                                                                                                                                                                                                                                              Arvo /yo/
Mesembryanthemum crystallinum pyrroline-5-carboxylate synthetase (PSCS) mRNA, complete cds.
2 (bases 1 to 2992)
Michalowski, C.B., Quigley-Landreau, F. and Bohnert, H.J.
                                          Unpublished
                                                                                                                                                                                                                                                                   AF067967.1 GI:3176964
                                                                                                                                                                                                                           Mesembryanthemum crystallinum (common iceplant)
                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGATGGTGATAAAGGTATCGTTTACACCCATAAAGACCTTACTTCACA 2155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCA 2245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGTCGGTGTTGAAGATTGCTAACAACAAGATGGATCGCCAGAGGTAGCGGGCAAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGCAAGCTCCTTGCTGCACATTCCAGAGGCACGATCACTTCATCATGAATACAGTTCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAG 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGG 2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCGTTTCGGGCTAGGTGCAGAGGTTGGGATAAGTACAAGTAGGATACATGCACGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGAC 2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACGTCAAGTTGACAGTTCTTCTGTACTTCACAATGCAAGCACAAGATTTAGTGACGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGGCAGTGCACACACTGATAGCATTATAACAGAGGACCATGAAGTCGCAGAAATCTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGCGCACAAAGCTCTGGGATTTCCAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTA 1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCTTGACGAGCTTATTGTAGAACTTCAAATTAAAGGTGTTGTTATACATGGTGGACCAA 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCTTGACGACATATTAGTAGCACTAAAAAACAGAAGGAGTTAATATTTATGGTGGACCTA 1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATÄAGTCTGCTAATÄTGGÄTÄTGGCAAAGAAGTTGTTTTGGATGCAAAAACGGÄTTATC 1626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAAACTGATTACC 1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGAATCAACGAAAATTCCTGTTCTGGGTCATGCTGATGGAATTTGCCATGTGTACGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTG 1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGATGATGTAATTGATCTTGTGATTCCAAGAGGCAGCAATAAACTTGTCTCTCAAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCA 1596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGCCTGCACTGTTGAGTTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTT 1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGCAGCCTGTAATGCAATGGAAACTCTCCTTGTTCACAAAGATTTGGTACAGAATGGTT 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGGTCCAAGGCTTATTGGACTTGTGACTTCTAGAGAGGAGATTCCCGATTTGCTTAAGC 1446
                                                                                                                                                                                                                                                                                                                                               PLN 03-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1566
                                                           밁
                                                                                                   δ
                                                                                                                                           밁
                                                                                                                                                                             Ś
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               먉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query 'Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     407
647 GGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAG
                                                                                   674 AGCCCCTTATGAGGATTCATCCGGTATATTCTGGGATAATGATAGTTTAGCGGCACTGCT
                                                                                                                                                                                                                                                                                                                    554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1538;
                                                                                                                                                                                                     527
                                                                                                                                                                                                                                                                                                                                                                                                                                494 TATGGCTCTTTATGACACCTTGTTTAGTCAGTTGGATCTGACTGCTGCTCAGCTGCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           434 TCAAAAACCGCAAGTCGAACTTGATGGGAAAGCATGTGCTGCTGTTGGGCAGAATGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        254 TGCTGTTGTTACGAGGAGTGATGGGAGACTGGCTCTTGGAAGACTAGGCTCACTCTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   194 CATGGACGCGACTAGAGCTTTCGTTAAGGACGTTAAGCGCGTCGTCGTCAAGGTTGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
Submitted (22-MAY-1998) Biochemistry, University of Arizona, Sciences West 513, Tucson, AZ 85721, USA
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                       CACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTC 526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAAAAGCCACAGATGGAGTTAGATGGAAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACT
                                                                                                                          GGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTTAGCAGGACTGTT
                                                                                                                                                                                                                                                           ATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAGCTCAAGGAACTCAACTCTGATGGATATGAAGTAATTTTGGTGACTTCGGGTGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGGTTAAGGAACTGTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGT 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cerceaccerceesaccrreersacesacereaacecercarcarcacaaceaeseacac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APYEDSSĞIFWDNDĞLAALLALELKADILITLSDVDGİYNGPPSDPRSKLISTYVKEK HQGEITFGDKSELGRGGMTAKKAAVVAAYAAYACIFVI LASGKAVDI IKVIDGÇCVGTLFHKDAHLMVYKETGVRDMAVAARSESRRLQAVSSEERKKILLDIADALEANBEKILA ENEADVAAQYAĞYDRSLVARLAMNPDKISSLAKSIRVLADMEEPIGRILKRTEIADG LILEKTSCPLGYLLIVERSREVALDVIDLYIPGRSKEAKKSNAILHKVIT SAIPDKYGEKLIĞIVYENEEPIGVLLIVERSREVALOYIKESTRIPVLGHA BAĞICHYYYDKSANMDMAKRIVLDAKTDYPAAÇNAMETILVHKDLAENGGLNDLIVDLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="mdatrafykdykryvykygtayytrsdgrlatgrlgslceqlkg
LNSDGYEVILYTSGAYSAGRQRLRFRKLYNSSFADLQKPQVELDGKACAAYGQNGLMA
LYDTLPSQLDLTAAQLLYTDNDFRDPSFRTQLTETVYQLLDLKYVPVLNENDAYSTRK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EGLLTTRWVLKGSGQVVHGDKGVVYTHKDLPLVAQNS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TEGVTMFGGPRIDALQEFNIQATQTFNREYSSPACTVEIVDDYYAAIEHINHHGSAHT
DCIIAEDHKVAETFLQLVDSAAVLHNASTRFCDGFRFGLGAEVGISTSRIHARGPVGV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="pyrroline-5-carboxylate synthetase"
/protein_id="AAC18862.1"
/db_xref="GI:3176965"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /gene="P5CS"
195. .2354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene="P5CS"
codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Mesembryanthemum crystallinum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           xref="taxon:3544"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       45.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1162.6; DB 8;
Pred. No. 8.5e-279;
0; Mismatches 599;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  599; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 2992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bio
                                   706
                                                                                         733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   253
                                                                                                                                                                                                        673
                                                                                                                                                                                                                                                                                                                    613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          433
```

Ś

B & B & B & B

밁

Ş

성 유

멂

```
1127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            794
CAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGA 1786
                                                                                                                                                                                                                                         AAGAATTCCTGTCCTGGGTCATGCTGATGGAATTTGTCATGTCTATGTTGACAAATCTGC
                                                                                                                                                                                                                                                                                                   TAAGATICCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTTGACAAATCAGC 1666
                                                                                                                                                                                                                                                                                                                                                                                               GATTGATCTCGTCATTCCAAGAGGAAGCAATAAGCTTGTTTCTCAGATTAAGGAATCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAA 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCATTGGCTATACGAAGTGGAAATGGGCTTCTTTTGAAGGGTGGAAAGGAGGCAAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTAGTTCTTGAGAAAACATCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGACAAGATTTCTAGCCTTGCAAAATCAATTCGTGTTCTTGCTGATATGGAGGAACCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCTGCGGCACAATATGCGGGATATGATAGGTCACTGGTTGCTCGGTTAGCCATGAACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGT 1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAAGAAATCACTTTTGGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGT
                                                                               TAATATGGATATGGCAAAGCGCATTGTTCTAGATGCGAAAACGGACTATCCTGCGGCATG
                                                                                                                                                          TGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCCTG 1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCAAATCAAGGCGTCAAC 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCCCTTGGGTGTACTCCTGATTGTGTTTGAGTCTCGTCCAGATGCTTTAGTTCAGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGC 1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TEGTAGAATTTTGAAGAGAACTGAGATTGCAGATGGACTCATCTTGGAGAAAACATCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGAPAGATAGCAAGCCTTGCAAPATCTATTCGTACCCTTGCAAATATGGPAGACCCTAT 1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATATTGCTAGA 1066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCTCATTTATGGGTTCAAGTTAAAGAAACTGGTGTGCGTGACATGGCAGTTGCAGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAG 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACCGACAATATTATCAAAGTAATTGATGGTCAGTGTGTGGCACCCTATTTCACAAAGA 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAATCGGAGCATTCTTAAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACAAGAA 946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAAAGCAGCTGTTTATGCTGCTTATGCTGGAATTCCTGTAATTATCGCTAGTGGCAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGA 886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGAGAAATCACTTTTGGAGATAAATCTAGGTTGGGCAGAGGGGGGTATGACTGCCAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGCCCACCAAGCGATCCACGATCAAAGCTTATCTCAACATATGTCAAAGAGAAGCATCA 853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTAATTGGTCTAGTCACCTCAAGAGATGAGATTCCTGATCTCCTTAAGCTTGATGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCAAATGCCATCTTACACAAGGTTATCACTTCTGCCATACCAGACAAAGTTGGTGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACC 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAGAGTTCTAGGAGGCTTCAGGCAGTGTCTTCAGAAGAAAAGAAAAAAGATTTTGCTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCTTTGGAACTAAAAGCAGATCTCCTTATTTTGTTGAGTGATGTGGATGGTCTTTATAA 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGGAGGCAAATGAAGAAAAGATCCTGGCTGAAAATGAAGCTGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         , 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             826
```

유정

성 음 성

유 영 명 영 명 영

Ş

음 성 음

Ś

TAATGCTATGGAAACACTTCTTGTACACAGAGGACCTAGCAGAGAATGGAGGCTTAAATGA

. 1873

밁

S

8 유

밁

Ś

```
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 9
SLU60267
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2294 TGGTGACAAAGGTGTGGTATATACCCACAAGGACCTGCCATTG 2336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1934 CTTGCAAGAGTTCAATATTCAAGCTACTCAGACATTCAATAGAGAGTACAGTTCACCAGC 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1874 CCTAATTGTTGATCTTAGAACTGAAGGTGTTACTATGTTTGGTGGACCAAGAATTGATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1787 CATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTTATGGTGGACC-----TATTGC 1840
                                                                                                                                                                   Maggio, A., Garcia-Rios, M., Fujita, T., Bressan, R.A., Joly, R.J., Hasegawa, P.M. and Csonka, L.N.
Cloning of tomPRO1 (Accession No. U27454) and tomPRO2 (Accession No. U60267) from Lycopersicon esculentum L.: coexistence of policistronic and monocistronic genes which encode the enzymes catalyzing the first two steps of proline biosynthesis (PGR96-077) plant Physiol. 112, 862 (1996)
3 (bases 1 to 2239)
Maggio, A., Fujita, T., Garcia-Rios, M., Bressan, R.A. and Csonka, L.N. pirect Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids; lamiids; Solanales; Solanaceae; Solanum; Lycopersicon. 1 (bases 1 to 2239)
Maggio,A., Garcia-Rios,M., Fujita,T., Bressan,R.A., Csonka,L.N., Joly,R.J. and Hasegawa,M.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cloning and partial characterization of PRO2, a second tomato gene encoding the enzyme involved in the first two steps of proline biosynthesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SLU60267 2239 bp mRNA linear PLN 24-JAN-2 Solanum lycopersicum delta 1-pyrroline-5-carboxylate synthetase (tompro2) mRNA, complete cds.
                                                                                              Horticulture Bldg., West Lafa
Location/Qualifiers
                                                                                                                                       Submitted (10-JUN-1996) Horticulture,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lycopersicon esculentum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             U60267.1 GI:1480669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lycopersicon esculentum (tomato)
                                                                                                                                                                                                                                                                                                                                                                                                                                        (1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGGGTTGAAGGGTTATTAACCACAAGATGGGTTCTCAAGGGAAGCGGACAAGTTGTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGTACAGTGGAAATAGTAGATGATGTATGCTGCCATTGAACATATTAACCACCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          regreaceaegargregregracacccaraagagrerrectrre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTAGTTGACAGTGCTGCTGCATCATAATGCAAGTACAAGATTCTGTGATGGATTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGAGTTGATAGTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTTGGATTGGGTGCCGAGGTTGGAATAAGTACAAGTAGGATTCATGCTCGAGGTCCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGTGCACACTGACTGCATTATTGCAGAAGATCACAAAGTTGCAGAAACGTTTTTTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGCACTGTTGAGTTTGATGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGG: 1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 2239)
                                                                                                                                                                                                                                                                                                                                                                                                                                                               PROCEEDINGS OF THE ASPP MEETING;
/organism="Lycopersicon
/mol_type="mRNA"
/db_xref="taxon:4081"
                                                                                                                     Lafayette,
                                                     esculentum"
                                                                                                                          IN 47907,
                                                                                                                                               Purdue University,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PLN 24-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2053
```

```
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 1529;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
459
                                                                                                                                                                                                                                                                                                                                                                                                                         514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      394 GTCAGAGTGGACTGATGGCTCTTTACGATATGTTTAACCAACTGGATGTCTCGTCAT 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGGGTTGTATAGTGGTCCACCAAGTGAACCATCATAAAAATCATACACACTTATATTA
                                                                                                                                                                                                                            TAGCAGGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGG
                                                                                                                                                                                                                                                                                                                        TCAGCACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTT 633
                                                                                                                                                                                                                                                                                                                                                                       ACACAGTAAATTCGTTGCTTTCTCTAAAAAGTTATACCTATATTCAATGAGAATGATGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                 AAACTGTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAAATGATGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCAACTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTTTCTTGATCTTCAAAAGCCACAAACTGAGCTTGATGGCAAGGCTTGTGCTGCTGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTTTGCTGATCTGCAAAAAGCCACAGATGGAGTTAGATGGAAAAGGCTTGTGCCGCTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTCTGGTGCTGTAGGTCGTCGTCAGCGGCTTAGATATAGGAAGTTGCTCAACAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ccrcaegrecrerregaeregeceacaeceaerraegraecegaaecrrercaaraeca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCCCTCTGTGAGCAGCTTCAGGAGCTTAATTCGCAAGGGTATGAAGTTATTTTGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGCTCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAAGGTTGGGACTGCAGTTGTGACTCGAGCTGATGGAAGATTAGCACTTGGAAGATTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCAAGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTTGGGCAGGGTTG
                                                                                                                                                                          TGGCAGCTCTTCTAGCTTTGGAATTAAAAGCTGATCTTCTAGTTCTGTTGAGTGATGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCAGCTTCTGGTGACTGATAATGACTTTAGAGATCCAGATTTTAGGAGACAACTCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGAAATGGAGACAGTTGATTCAACTCGAGCATTTGTGAAGAACGTCAAACGACTCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IMALYDŠLFSQLDVTSAQLLVTDNDFRDEDFRRQLNDTVÑSILŠLKVIFFFNENDĀIS
TRRA PYEDSSGIFWDNDSLAALLALELKADLIVLLSDVDGLYSGFPRDEDSKLTYTYI
KEIHERVITFGDKSR VIERGGMTAKVKAMY SAYAGIFVVITSGFBATDMI IKVLHGERI
GTLFHCDANKWASIGETDAREMAVAARACSRRLQALSSQERSKIIQDIADALEANEKA
ILAENBADVVAAQQAGYEKSLISRLALNFGKISSLANSVRVLGMODEPLGHTLKRTEI
ADGFILEKSSSFLGVVLIIFESRPALVQIASLAVRSGMUNGLMLKGGKEAKRSNAILHK
VITSAIFVSVGERLIGLVTSREEIFELLKLDDVIDLVIFRGSNKLVSQIKASTKIPTL
GHADGICHVYDKSADMDMAKRITVDAKIDYPACKNAMETLLVHKDLAQNGGINDLIV
ELQTKGVSLYGGPKASSLLMIPEARTFRHEYSSLACTVEVVEDVAAIDHIHQHGSAH
TDSIITEDQEVAEVFLRQVDSAAVFHANSTRFSDGFFFGLGAEVGISTGRIHARGPVG
VEGLLTTKMLARGSGQIVDGDKSIVYSHKDLTQQG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="GI:1480670"
/translation="METVDSTRAFVKNVKRLIVKVGTAVVTRADGRLALGRLGALCEQ
/translation="METVDSTRAFVKNVKRLINSSFLDLQKPOTELDGKACAAVCQNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/product="delta l-pyrroline-5-carboxylate synthetase"
/protein_id="AAB67875.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="tomPRO2"
44. .2197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="tomPRO2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                45.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1153.4; DB 8; Length Pred. No. 1.6e-276; 0; Mismatches 626; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 2239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ..
                            813
                                                                            698
                                                                                                                                                                             638
                                                                                                                                                                                                                            693
                                                                                                                                                                                                                                                                                                                                                                          518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                    S
                                                                                                 밁
                                                                                                                                             Ś
                                                                                                                                                                                                  문
                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1054 AGATATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGA 1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   814 TGACAGCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     699 AGGAAATACATGAGAGAGTGATTACTTTTGGAGACAAGTCCAGGGTGGGAAGAGAGGGCA 758
       CCAAAGCTAGCTCCCTGCTCATGATTCCAGAGGCACGTACATTTCGTCACGAATATAGTT
                                                 CTATTGCGCACAAAGCTCTGGGATTTCCAAAAAGCTGTTTCATTTCATCATGAGTATAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAAACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCT 1353
                                                                                                                                                   CAGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGAC
                                                                                                                                                                                                                                                 ACCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAA 1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAA 1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTA 1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGAGGCCAAAAGATCAAACGCCATCTTACACAAGGTGATTACCTCGGCAATTCCTGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGCTTTAAATCCAGGAAAAATTTCTAGTCTTGCAAACTCAGTTCGTGTGCTGTCTAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATA 1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAGTGGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTC
                                                                                                                                                                                                    ATCCTGCAGCCTGCAATGCGATGGAAACACTTCTTGTGCATAAGGATTTGGCACAAAATG
                                                                                                                                                                                                                                                                                                   TTGACAAGTCTGCTGACATGGATATGGCTAAGCGCATTACTGTTGATGCAAAAATCGATT
                                                                                                                                                                                                                                                                                                                                                TTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATT
                                                                                                                                                                                                                                                                                                                                                                                                    TCAAGGCATCAACAAAATTCCTGTTCTAGGCCATGCTGATGGAATTTGCCATGTTTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCCACGTATATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCTTGACGATGTGATTGATCTTGTTATCCCAAGAGGTAGCAATAAACTTGTTTCTCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGTACAGATAGCTTCTAGCAGTCCGAAGTGGGAACGGCCTCATGTTGAAAGGAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAA 1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAATCATCATCTCCATTAGGCGTTGTATTGATTATTTTTGAGTCACGACCTGATGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGATGAGCCCCTTGGTCACACTTTAAAAAGAACGGAGATTGCTGATGGATTCATCTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGAAGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGAAGCTGATGTGGTTGCTGCTCAACAGGCCGGATATGAGAAGTCTTTGATATCTCGTC 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGAT 1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAATATTGCAGGATATAGCTGATGCACTGGAAGCAAATGAAAAGGCAATCCTCGCTGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGTGGCTGCAAGGGCATGTTCCAGACGTCTTCAGGCACTGTCTTCCCCAAGAAAGGAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGTTGCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTTTCATTGTGATGCCAATAAATGGGCCTCAATTGGAGAGACTGATGCTCGTGAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTTTCACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGG 993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGTGGCTTTGCGACAGATAACATCATCAAAGTGCTGCATGGGGAACGTATAGGCACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGACTGCCAAAGTAAAAGCTGCTATGTATGCTGCTTATGCTGGCATTCCTGTTGTCATAA
                                                    1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1478
                                                                                                                                                                                                                                                    1773
                                                                                                                                                                                                                                                                                                   1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    938
       1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   873
                                                                                                                                                     1833
                                                                                                                                                                                                                                                                                                                                                        1713
                                                                                                                                                                                                                                                                                                                                                                                                    1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     878
```

δ 밁 Ś 엉

片 S 멂

밁 ð 밁 Ś

밁 δ á B Ş 밁 Ś 밁 Ś

밁

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                          REMARK
                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PUBMED
                                                                                                                                                                                      gene
                                                                                                                                                    Sgo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2194 TGGTGAATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAATG 2248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2134 GACCAGTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAG 2193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2019 GATTCCGCTTTGGACTTGGTGCAGAGGTGGGCATTAGTACTGGTCGTATTCATGCTCGTG 2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2014 TTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATG 2073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1899 AGCATGGAAGTGCCCACACCGATAGCATCATTACTGAAGATCAGGAAGTTGCTGAAGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1954 GTTATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTT 2013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1894 CTATGGCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATC 1953
                                                                                                                                                                                                                                                                                                                                                                      Submitted (24-APR-1998) Stines A.P., Horticulture, Viticulture and Oenology, University of Adelaide, Plant Research Centre, Waite Campus, Urrbrae, South Australia, 5064, AUSTRALIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Stines, A.P., Naylor, D.J., Hoj, P.B. and van Heeswijck, R. Proline accumulation in developing grapevine fruit occurs independently of changes in the levels of deltal-pyrroline-5-carboxylate synthetase mRNA or protein Physiol. 120 (3), 923 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; Vitaceae; Vitis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AJ005686
AJ005686.1 GI:4585616
delta 1 type; pyrroline-5-carboxylate synthetase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VVI5686

2374 bp mRNA linear PLN 30-JUL-19:
Vitis vinifera mRNA for pyrroline-5-carboxylate synthetase (delta
                                                                                                                                                                                                                                                                                                                                                        Revised
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Vitis vinifera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Vitis vinifera
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     10398729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTG 2133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACTAGCTTGCACTGTGGAAGTTGTTGAAGATGTATATGCTGCGATAGATCATATACATC 1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTTACGTCAGGTTGACAGTGCTGCTGTATTTCACAACGCAAGTACAAGATTTAGTGATG 2018
                                                                                                                                                                                                                                                                                                                                                                                                                                rect Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGTTGĀTGGTGĀTĀĀATCAATTGTGTĀTĀGTCĀCĀĀAGACCTTĀCTCAGCĀĀGG 2193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCCAGTTGGAGTTGAAGGATTGCTAACAACTAAATGGCTTGCAAGGGGAAGTGGACAAA 2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 2374)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 2374)
                                                                                                                                                                                                                                       /mol_type="mRNA"
/cultivar="Shiraz"
/db_xref="+>===
                                                                                                                                                                                                                                                                                                                                                        by author
                                                                          /function="gamma glutamyl kinase and
glutamate-5-semialdehyde dehydrogena
/evidence=experimental
/product="pyrroline-5-carboxylate synthetase"
/protein_id="CAB40834.1"
                                                                                                               /gene="p5cs"
/EC_number="2.7.2.11"
                                                                                                                                                  /gene="p5cs"
48. .2336
                                                                                                                                                                                                     /tiasue_type="grape berry"
/dev_stage="10 weeks post-anthesis berry"
                                                                                                                                                                                                                                                                                                                                      location/Qualifiers
                                                                                                                                                                                                                                                                                               organism="Vitis vinifera"
                                                          codon_start=1
                                                                                                                                                                                                                                                                                                                     .2374
                                                                                                                                                                                                                                            xref="taxon:29760"
                                                                            dehydrogenase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PLN 30-JUL-1999
                     S
                                                                                            á
                                                                                                                                   片
                                                                                                                                                                                                       皮
                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                          片
                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 1536;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local (
                                                                                                                                                                                                           593
                                                                                                                                                                                                                                                                                                                                                                                                                               413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         278
                                                            713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113
```

```
/db_xref="GI:4585617"
/db_xref="GOA:QSXGC4"
/db_xref="GOA:QSXGC4"
/db_xref="GOA:QSXGC4"
/db_xref="GOA:QSXGC4"
/translation="MMDAMDPTRAFPVKDVKRLVIKFGTAVVTRSDGRLALGRLGALC
EQIKELNSQGYQVIVVTSGAVELGRQELRYRSLLNSSFADLQKRQAELDGKACAAVGQ
NNLMALYDTILFSQLDVTSAQLLVTDNDFFDBAFRNQLTQTVDSLLALAVIP I FINENDA
EVTRKAPYEDSSGIFMDNDSLAGILALQLKADLLVLLSDVDGLYSGPPSDPRSLLIHT
YLEKGHQGQITFGDKSRVGRGGMTAKVGARVSAQAGIFVVITSGYATGSILKVLNGE
RIGTLFHRDAYKWQQVCEVGAREMAVAARESSRRLQAGIFVVITSGYATGSILKVLNGE
ELIKIENDADYEAAQLAGYEKSLVSRLVLKFGKISSLANSIR VLANMERPIGHVLKKT
TVADGLILEKNGSCPLGYLLIVESRPWALVQIASLANSGORKKLILDIANALETNE
ELIKIENDADVEAAQLAGYEKSLVSRLVLKFGKISSLANSIRVLLAMGERPIGHVLKKT
TVADGLILEKNGSCPLGYLLIVESRPWALVQIASLANGSORKKLYSQIKOSTKIP
VLGHADGICHYVDKSANMDTAKHIVLDAKVDYPAACNAMETLLVHKDLVGTGGLNQL
IVELRNEGYTLYGGPKASALLNLPEAHSFHHENNSMACTVEIUDVHSALDHINHGGS
AHDCIIAEDLEVAFVFRADLSCARFFGLGAAGWISTSRIHARGFV
GVEGLLTTRWILRGNGQVVNGDKGVTYLHPQGAYFAALSLSHSLLGGDLLNNVGLGTF
DFSFCNGRRVNWTLDLKEVIYQ"
```

```
818 AGCAAAAGTGAAGGCTGCTGTCTTTGAGCTTCAAATAGCGGCACACCTGTGGTTATTACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                               533 AACAAGGAAAGCTCCATATGAGGATTCTTCGGGAATATTTTGGGATAATGACAGTTTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  578 CACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGC 637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             473 AGTGGÁTTCÁTTGTTÁGCTTTGAGGGTTÁTTCCTATÁTTTÁATGAAAATGÁTGCTGAAGT 532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                518 TGTTGAGTÇATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            458 ACTTCTTGTCACCGACAGTGATTTTGAGAACCCCAAAGTTCCGGGAGCAACTCACTGAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       353 AAATAACCTTATGGCTCTCTATGACACATTATTTAGCCAGCTGGATGTGACATCAGCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             398 GAGTGGACTGATGGCTCTTTACGATATGTTTTAACCAACTGGATGTCTCGTCATCTCA 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             173 ACTTTGTGAGCAGATCAAAGAATTGAACTCTCAAGGATATCAGGTCATTGTGGTCACATC
                                                                                                                                               218 TCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 158 GGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGC 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       53 CATGGACGCCATGGATCCAACTCGAGCTTTTGTTAAGGACGTTAAGCGTCTCGTAATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98 CATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCAA 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                    GTTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGA
                                                                                                                                                                                                                                                                                                                                                                   AGGACTGTTGGCACTGGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTTCTTGTGACTGATAATGATTTTAGGGATGAAGCTTTCCGAAATCAACTTACTCAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCTGATCTGCAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCA
                                                                                                                                                                                                                                                                                                                   AGGCCTACTGGCTTTGCAGCTAAAGGCTGACCTCCTTGTTCTATTGAGCGATGTAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGTGCTGTTGGCCTTGGTCGCCAAAGGCTTAGATACAGGAGTTTACTCAACAGCAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTTGGGACTGCTGTTGTCACTCGGTCTGATGGAAGATTAGCACTCGGAAGACTAGGTGC
                                                                                            AGGTCATCAGGGACAGATTACTTTTGGAGACAAGTCGAGGGTTGGAAGAGGGGGTATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCTGATCTCCAAAAACCACAAGCTGAGCTTGATGGTAAGGCGTGTGCAGCTGTTGGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             44.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1143.6; DB 8;
Pred. No. 4.6e-274;
0; Mismatches 609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                      877
                                                                                                                                                                                                                                                                                                                                                                            697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       112
                                                                                                                                                                                                           712
                                                                                                                                                                                                                                                                757
                                                                                                                                                                                                                                                                                                                      652
                                                                                                                                                                                                                                                                                                                                                                                                                                  592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2;
```

```
1613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  833
GGCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTA 1957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a cagata gette getta geaate egaage ggaategaettetetteaaage ggaaaaga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGTCATGCCCATTAGGTGTGCTCCTAATTGTTTTTGAGTCTCGACCAAATGCTCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGT
                                                                                  GGCAAGTGCCTTGCTGAATCTTCCAGAGGCTCACTCTTTTCATCATGAGTATAATTCAAT
                                                                                                                                                                                                                                                                                                                                                                           AGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCCAAGCGATCTAATGCAATTCTTGCAAAGGTTATTACTGAAGCCATTCCAGACAGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGA
                                                                                                                                        TGCAGCCTGTAATGCAATGGAAACACTTCTTGTACACAAGGATTTAGTGCAGACTGGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGATGATGTGATCGACCTTGTAATCCCCAAGAGGCAGCAATAAACTTGTTTCTCAAATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCTGATGTTGAGGCAGCACAACTGGCTGGATATGAAAAATCATTGGTTTTCAAGGCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGGTATGCTACTGGAAGTATCTTAAAGGTCCTTAATGGGGAAGCGTATTGGCACTCTTTT
                                                                                                                                                                                                    CCTCAATCAGCTTATCGTAGAGCTCCGCAATGAAGGGGTTACTTTATATGGTGGACCAAA 1792
                                                                                                                                                                                                                                                         CCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                           CAAGTCTGCTAATATGGATACTGCAAAGCACATCGTATTGGATGCAAAAGTAGATTATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGATTCAACAAAAATTCCTGTTCTGGGCCATGCTGATGGCATCTGCCACGTTTATGTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGGAAGAAGCTAATTGGACTTGTGACTTCAAGAGAGGAGATCCCTAATCTCCTCAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGACCAATTGGTCATGTTTTGAAGAAAACTGAAGTTGCAGATGGACTTATCCTAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTAAAGCCTGGAAAGATTTCAAGCCTTGCAAACTCAATTCGTGTGCTTGCAAACATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTACTGGACATAGCCAATGCACTGGAAACAAATGAAGAACTGATTAAAATTGAAAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGA 1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCAGCAAGGGAAAGTTCCAGGCGGCTTCAGGCAATGTCTTCACAAGACAGGAAGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCATCGAGATGCCTATAAATGGGTACAAGTTAAAGAAGTTGGCGCACGTGAAATGGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCGAAAGTAAAATCTGCAGTTTATTCATCTCAGGCTGGCATTCCTGTTGTTATTACTAG
                                                                                                                                                                                                                                                                                                                                                                              1777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1057
                                                                                  1852
                                                                                                                                                                                                                                                             1837
                                                                                                                                                                                                                                                                                                                         1732
                                                                                                                                                                                                                                                                                                                                                                                                                                           1672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    832
                                                                                                                                           1897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      997
```

문 Ś 밁 Ş В S В Ş 밁 Ś 밁 5 밁 Ś 밁 Ś B Ś 밁 Ş ₽ δ g Ś В Ş 밁 δ 밁 Ş 밁 Ś 밁 S 뭕 Š 밁

GGCTTGCACTGTTGAGATTGTTGATGATGTACATTCTGCCATTGATCATATTCACCGACA 1912

```
JOURNAL
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 11
MTR278818
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                   gene
                                                                                                                                                                                                                                                                                                                                                           gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Medicago truncatula
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
rosids; eurosids I; Fabales; Fabaceae; Papilionoideae; Trifolieae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AJ278818.1 GI:27527060
AJ278818.1 GI:27527060
pSCS1 gene, pyrroline-5-carboxylate synthetase 1.
Medicago truncatula (barrel medic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Saint
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
Submitted (09-AUG-2000) Armengaud P.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 (bases 1 to 2520)
Armengaud, P.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Armengaud, P.A. and Savoure, A. Contribution of both glutamate and ornithine pathways to stress responsive and developmental regulation of proline accumulation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MTR278818 2520 bp mRNA linear PLN 06-JAN-2 Medicago truncatula mRNA for pyrroline-5-carboxylate synthetase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAATGGTGACAAGGATG----TCGTGTACACCCCATAAGAGTCTTCCTTTGCA 2245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAATGGCGATAAAGGGGTTACTTACATCCCACAAGGAGCTTACTTTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGTCGGAGTTGAAGGATTGTTAACAACAAGATGGATTCTCAGAGGAAATGGCCAAGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGCCAAGTTGATAGTGCTGCTGTCTTTCACAATGCTAGCACAAGATTTTGTGATGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGTTTTGGACTTGGGGCCGGAGGTTGGATAAGTACAAGTAGGATTCATGCTCGAGGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGAAGTGCACA---CGATTGCATCATTGCAGAAGACCTTGAAGTTGCTGAAGTGTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Leu, 80039 Amiens,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene).
                  /translation="MANADPCRDFVKDVKRIIIKVGTAVVTRQDGRLAVGKLGALCEQ
IKELAVIIGYEVILVSSGAVGIGRQRLEYRKLIQSSFADLQKFQVELDGKGAVGQSS
LMATYDDLFSQLDVTSAQLLYTDNDFRDQDFRNQLSTVKSLLALKVIFIFNENDNS
TRKAPYEDSSGIFWNNDSLSALLALELKADLLILLSDVDGLYNGPPSDPLSKLIHTYI.
KEKHQNEITFGDKSRVGRGGWTAKVKASVHAADAGIFVIITSGNAAENLTKIILGGQRI
GTLFHKDAHKWVPSKEVDVREMAVAARDCSRRLQAVSSEERKQIILLNIADALQSREKE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    truncatula
IRIENEADVVAAQEAGYEKSLVARLVLKSEKIVGLANNIRIIANMEDPIGRVLKRTEL
                                                                                                                                                                                               /codon_start=1
/product="pyrroline-5-carboxylate
/protein_id="CAC82184.1"
/db_xref="GI:27527061"
                                                                                                                                                                                                                                                                                    /gene="p5CS1"
/EC_number="1.5.1.12"
/function="first step of proline biosynthesis"
                                                                                                                                                       db_xref="SPTREMBL:Q8GUA9"
                                                                                                                                                                                                                                                                                                                                                                              'gene="p5CS1"
                                                                                                                                                                                                                                                                                                                                                                                                                        country="France"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   variety="R108-1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             organism="Medicago truncatula"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ocation/Qualifiers
                                                                                                                                                                              xref="GOA:Q8GUA9
                                                                                                                                                                                                                                                                                                                                                                                                                                                  xref="taxon:3880"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _type="mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FRANCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biology,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       University,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLN 06-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       G
G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ä
```

AEGLILEKTSSPLGVLLIIFESRPDALVQIASLAIRSGNGLLLKGGKEANRSNAILHK VITEALPDTVGSKLIGLVTSRAEIPELLKLDDVIDLVIPRGSNLKLVSDIKSSTKIPVL GHADGICHVYVDKSANLEMAKQIVLDAKTDVSSGCNAMETLLVHKDLVEKGMLNSISV NLRSEGVTLYGGPKASSLLNVPLARSLHHEYGSLACTVEIVDDVYAAIDHINRYGSAH TDSIVTEDHEVANVFLRGVDSAAVFHNASTRFSDGARFGLGAEVGISTSRIHARGPVG VDGLLTTRMLLKGNGQVVDGDKKVTYTHRDITT"

밁 Ś Ş 밁 Ś 밁 片 Ś B 8 밁 Ś 밁 片 밁 δ Query Match
Best Local Similarity
Matches 1510; Conserv 939 851 879 791 919 731 671 611 639 551 579 491 519 431 459 371 399 311 339 251 279 191 131 159 759 71 ACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCA 638 AGTGGACTGATGGCTCTTTACGATATGTTTTTAACCAACTGGATGTCTCGTCATCTCAA 458 GCTGACCTTCAGAAGCCACAAGTTGAACTTGATGGCAAGGCTTGTGCTGCTGTTGGACAA 370 GTTGGTACTGCTGTTGTTACTCGCCAAGATGGAAGATTAGCAGTTGGAAAATTAGGGGCA 190 GTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCT 218 ATGGCGAACGCCGACCCTTGTAGAGATTTCGTCAAAGATGTTAAGCGCATAATCATCAAG 130 TTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAA 758 ACTAGGAAAGCTCCATATGAGGATTCTTCTGGCATATTTTGGGATAATGACAGTTTATCA GTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGC 578 CTTCTTGTTACTGACAATGATTTTAGAGACCAAGATTTTAGAAACCAACTTTCTGAAACT GCTGATCTGCAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAG 398 CTCTGTGAGCAGATTAAGGAGCTTAACATTCTTGGTTATGAAGTTATTTTAGTTTCATCA CTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCA 278 CATAAAGATGCACAAGTGGGTCCCTTCAAAAGAGGTTGATGTACGCGAGATGGCTGTT CACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTT GGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTT 938 GCCAAAGTAAAAGCTTCTGTTCATGCAGCTGATGCCGGAATTCCTGTTATCATTACCAGT GCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGT 878 AAGCATCAAAATGAAATTACTTTTGGAGACAAGTCTAGGGTTGGAAGAGGGGGGAATGACA GCTTTGCTGGCCTTGGAATTAAAAGCAGATCTTCTTATTTTGTTGAGTGATGTAGATGGT GGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGG 698 CTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACT AGCAGCCTTATGGCTACTTACGATGATTTATTTAGTCAGCTGGATGTGACGTCTGCTCAG 430 GGTGCTGTTGGTCTTGGTCGCCAAAGGCTTAGATATAGAAAATTGATTCAAAAGTAGTTTT GGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTT ATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAG 158 GGTAATGCAGCTGAAAATCTCACTAAAATTCTCCAAGGACAGCGTATTGGTACCCTATTC Conservative 44.6%; Score 1137.4; DB 8; 70.9%; Pred. No. 1.6e-272; tive 0; Mismatches 621; Indels Length 0 518 338 998 790 730 610 550 970 910 850 490 0

Ś

밁 S В Ś В Ş

맑 5 片 Ś 밁

8

Ş

999 GCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATA 1058

Ś

S 밁 S 닭 8 밁 S 밁 Ś 밁 Ś 밁 Ś Ś 밁 片 S 밁 Ś S Ş 밁 밁 Ś 문 맑 Ś 밁 Ś 8 g 멂 8 밁 밁 S 1899 1811 1839 1779 CTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATT 1838 1659 1571 1511 1451 1479 1391 1331 1271 1211 1151 TTAAAGAGTGAGAAGATCGTAGGCCTTGCCAACAACATACGAATTATTGCAAACATGGAA 1959 1871 1691 TCÁGGATGCAATGCATGGAAACACTTCTTGTTCATAAGGATTTGGTAGAGAAAGGCTGG 1750 1719 GCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGC 1778 1299 1631 ÁBATCTGCTBATTTGGÁGATGGCTBAGCAGATTGTACTCGATGCTBABACAGATTBTCCB 1539 GATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAG 1359 CAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAA 1418 1179 АТРАРАВССАGGARAGATAGCRAGCCTTGCRARATCTRTTCGTACCCTTGCRARATRTGGRA 1238 1031 TIGCTABATATAGCTGATGCATTGCAATCACGTGAGAAAGAGATCAGGATTGAAAATGAA 2079 CETTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCA 2138 1931 1599 GCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCCACGTATATATTGAC 1658 971 AGTTCGÁCGÁÁAATCCCTGTTCTAGGTCÁTGCTGÁTGGAÁTTTGTCÁCGTCTÁTGTTGÁT 1630 GATGATGTAATTGATCTGGTGATTCCAAGAGGCAGCAATAAACTTGTTTCTGATATTAAG GGTTCAAAACTTATTGGACTTGTGACGTCAAGAGCTGAAATACCTGAGCTACTTAAGCTG 1510 GATCCGATTGGTCGAGTTTTAAAACGAACTGAGCTTGCAGAGGGGGTTAATTTTGGAGAAA GCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACT GGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTA 2018 GCTTGCACCGTGGAAATTGTGGATGATGTTTATGCAGCTATTGATCATATAAATCGTTAT GCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTAT GCAAGTTCTCTGTTGAATGTTCCACTTGCTCGTTCATTACATCACGAGTACTGTTCGTTG 1870 AAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCA 1718 GCTAATCGATCAAATGCCATTTTGCACAAAGTAATTACTGAAGCCATACCTGATACTGTT GCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTT 1478 CAGATAGCTTCCTTGGCAATACGAAGTGGGGAATGGGCTTCTCTTGAAAGGAGGCAAGGAG ACATCATCTCCTTTGGGAGTCCTTTTAATTATTTTCGAGTCTCGCCCTGATGCATTGGTA ACATOTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTT 1358 GACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAA 1298 GCTGACGTTGTTGCTGCACAAGAAGCAGGATACGAAAAATCCTTGGTTGCTAGGCTGGTT TTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAA 1118 CGTCAAGTCGATAGTGCTGCTGTTTTTCACAATGCTAGTACAAGATTCAGCGATGGAGCA CGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCT 2078 GGAAGTGCACATACCGATTCCATTGTCACAGAAGATCATGAAGTAGCTAATGTATTTCTT CTCAATAGTATTAGTGTCAATTTGCGGTCAGAAGGTGTTACGTTATATGGAGGACCGAAA 1810 GGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTT 1538 1570 1598 1450 1390 1150 1178 1090 1030 2050 1930 1958 1690 1330 1270

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 12
AF314812
                                                                    8
                                                                                                                                               ß
                             片
                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                        Matches 1509;
                                                                                                                                                                                                                                                                                                        Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2051 CGATTTGGATTAGGCGCAGAGGTTGGAATAAGTACAAGCAGGATTCATGCTCGGGGTCCA 2110
                                                                                        169
                                                                                                                                                                                                          109 TCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAGGTGGGCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (19-OCT-2000) Lab. of Biochemistry, Graduate School Biotechnology, 1, 5-ka, Anam-dong, Sungbuk-ku, Secul 136-701,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Isolation of a gene encoding the delta 1-pyrroline-5-carboxylate synthetase B in Brassica napus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Brassica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Brassica napus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF314812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AF314812
2529 bp mRNA linear PLN 06-1
Brassica napus delta l-pyrroline-5-carboxylate synthetase B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rep.of Korea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kang,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Brassica napus (rape)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF314812.1 GI:12667250
                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGGTGATAAAAAAGTTACCTATACCCACA 2201
                             CAGTTGTTACAGGGAAAGGTGGAAGATTGGCTCTTGGCCGCTTAGGAGCTATCTGCGAGC
                                                                                    CAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGC 228
                                                                                                                                                  TAGATCGTTCCCGCGCTTTCGCCAAGGACGTTAAGCGTATCGTTGTCAAGGTTGGGGACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATGGTGACAAGGATGTCGTGTACACCCATA 2229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTAGGAGTTGATGGATTGTTAACAACCAGATGGCTTCTCAAAGGAAATGGACAAGTAGTA 2170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTG 2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (bases 1 to 2529)
g, Y.H. and Lee, S.Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 2529)
                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Y.H. and Lee, S.Y.
                                                                                                                                                                                                                                                                                                                                                                                                                 SIMAYYETMFDQMDVTVAQMIVTDĞSFRDKÖFRKQLSETVKAMIKMRVI PVFNENDÄI
STRKAPYKDSTGI FWDNDSLAALIALELKADILIILISDVEGILYTGPSDDKSKLIHTY
VKEKHQEBI TFGEKSRLGRGGMTAKVKAAVNAAYGGI PVI ITSGYAARBIAKVLKGIL
VGTLFHQDAHLMARVDTTSRDMAVAARESSRKLQALSSEDRKNI LLDI ANALEANEK
I IKAENDLDVAAAQEAGYEESI VARLVKKPGKI SSLAASI ROLAEMEDDE TRAVLKKEE
VADGLILEKTSSBIGVLLI VPESRE PDALVQI ASLAI RESGNGLLKGGKBEARSNAI LH
KVI TDAI PKTVGGKLI GLVTSRDE I PDLLKLDDVI DLVI PRGSNKLVSQI KNSTKI PV
LGHADGI CHVYVDKSCKVDMAKRVVSDAKLDVBAACNAMETLLHKDLEQNGVLNELI
YALQANGVTLVGGPKASGKLNI EVKSFHHEYSSKACTVE I VEDVHGAI DHI HQHGSA
HTDCI VTEDSEVABI FLKQVDSAAVI HNASTR FCDGFRRGLGAEVGI STSRI HARGBV
GVEGLL TTRWI NFRGKGQVVDGDNGVAYTHKDL FVLERTKAVQNGH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/product="delta" 1-pyrroline-5-carboxylate synthetase B"
/protein_id="AAK01361.1"
/db_xref="d1:12667251"
/translation="MEDEIDRSRAFAKDVKRIVVKVGTAVVTGKGGRLALGRLGAICE

/translation="MEDEIDRSRAFAKDVKRIVVKVGTAVVTGKGGRLALGRLGAICE"
/translation="MEDEIDRSRAFAKDVKRIVKVGTAVVTGKGGRLALGRLGAICE"
/translation="MEDEIDRSRAFAKDVKRIVKVGTAVVTGKGGTAVVTGKGGGRLAUT"
/********************************
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Brassica napus"
/mol_type="mRNA"
/db_xref="taxon:3708"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Bnp5cs2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                  44.1%;
                                                                                                                                                                                                                                                                        o
;
                                                                                                                                                                                                                                                                        Pred. No. 2.9e
0; Mismatches
                                                                                                                                                                                                                                                                                               Score 1124.4; DB 8; Pred. No. 2.9e-269;
                                                                                                                                                                                                                                                                        641;
                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                               Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PLN 06-FEB-2001
                                                                                                                                                                                                                                                                        <u>.</u>
                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of.
                                                                                                                                                                                                                168
                             252
                                                                                                                                                  192
                                                                                                           δ
                                                                                                                                                                            문
                                                    밁
                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            229 AGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTTG
CATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCAT 1368
                                                                                                              ACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCC 1308
                                                                                                                                                                                                                                       GAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAA 1248
                                                                                                                                                                                                                                                                                                  CTGCAGCACAAGAAGCTGGATATGAAGAGTCTTTGGTAGCTCGTTTAGTTATGAAGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACATTTGTGGGCTAGAGTCGTAGATACTTCTCGTGACATGGCAGTTGCTGCAAGGG
                                                       GTCGTGTTCTAAAGAAAACTGAGGTTGCAGATGGTCTTATTTTAGAGAAAACCTCATCAC
                                                                                                                                                                            CTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAGTTCTAGAAAGCTTCAGGCTTTGTCTTCAGAAGATAGGAAAAACATTCTACTAGATA 1092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATATTGCTAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGAGAATATAGCTAAAAGTTCTTAAAAGGACTGCGTGTTGGTACCTTGTTCCACCAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAAA 888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGAGATTACCTTTGGCGAGAAGTCCAGATTAGGACGAGGTGGTATGACTGCAAAAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCCTCCAAGCGATCCTAAGTCAAAGTTAATCCACACATACGTTAAAGAGAAACACCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAAAAGCATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCCCTTACAAGGATTCTACTGGTATATTTTGGGATAATGACAGCTTAGCTGCTCTACTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGATAGCAGTTTCAGAGATAAGGATTTCAGGAAGCAACTTAGTGAGACAGTCAAAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCTTGGTCGTCAGAGGCTTAGATACAGACAATTAGTCAACAGCAGCTTTGCAGACCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCTTGCTGAATTGAACTCGGATGGTTTTGAGGTCATTTTGGTGTTCTTGGTGCGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                           TAGCCAACGCTCTAGAAGCAAATGAGAAAATAATTAAGGCTGAGAATGATTTAGATGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGCTGCTGTTAATGCAGCTTATGGTGGCATTCCTGTTATCATAACCAGTGGGTATGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGAAATCACTTTTGGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCTGAAAATGAGAGTTATTCCAGTTTTCAACGAGAATGATGCTATAAGCACTCGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCGACAGTGATTTTGAGAACCCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCAT 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGTGGGGGGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGCTTACTATGAGACTATGTTTGACCAGATGGATGTGACGGTGGCTCAAATGCTGGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAAGCCACAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTTGGACAGAGCAGTCTCA
                                                                                                                                                                                                                                                                                                     1212
                                                                                                                                                                                                                                                                                                                                                                1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     312
```

```
KEYWORDS
SOURCE
ORGANISM
                                                                                                          RESULT 13
AB056452
LOCUS
                                                                       DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                덩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                     당
                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1333
                                                                                                                                                                                                                                                                          2173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1609
Vigna unguiculata
               Vigna unguiculata (cowpea)
                                                      AB056452.2 GI:37951331
                                                                     Vigna unguiculata VuP5CS mRNA, complete cds.
AB056452
                                                                                                          AB056452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTTGGCAAGTGGAAGTGGTCATCTCCCTAAAAGGTGGAAAAGAAGCTATCAGAT 1428
                                                                                                                                                                                                                                  AGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATG 2258
                                                                                                                                                                                                                                                                      TTGGTGCTGAGGTGGGAATAAGCACAAGCAGGATCCATGCCCGTGGTCCAGTTGGAGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGAT 2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGAAATTGTAGAAGACGTACACGGTGCTATAGATCATATTCACCAACACGGGAGTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGAGTTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACTGAACATTCCGGAAGTAAAATCATTTCATCACGAGTACAGTTCCAAGGCCTGCACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCTGGGATTTCCAAAAGCTGTTTCATTCATCATGAGTATAGTTCTATGGCCTGCACTG 1908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTATATATGCCCTGCAAGCCAATGGTGTCACTTTGTATGGTGGGCCCAAAAGCAAGTGGTA 1872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAG 1848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGCTATGGAAACCCTTCTTGTACATAAGGATCTAGAGCAGAATGGTGTGCTAAACGAGC 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACA 1788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGTAGACATGGCAAAACGTGTTGTTTCAGATGCAAAGTTAGACTATCCAGCAGCCTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCCTGCA 1728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCATAGGACTTGTGACTTCGAGAGATGAGATTCCTGATTTGCTCAAGCTTGATGATGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCGAAGACTGTTGGAGGTAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAAAC 1488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACTTGCAATCAGGAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAAGAGGCTCGTCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATTAGGTGTTCTTCTGATTGTTTTTGAATCCCGTCCTGATGCACTTGTTCAGATAGCTT 1392
                                                                                                                                                                                                     ATGGAGTCGCTTACACTCATAAGGACCTTCCTGTCTTAGAAAGGACAAAG 2282
                                                                                                                                                                                                                                                                                                           AAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTGACA
                                                                                                                                                                                                                                                                                                                                                                                reserecreaserrescaraascacasescerarecarecesseseaccasrescre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACACTGATTGCATAGTGACAGAAGATAGTGAAGTGGCAGAGATCTTCCTCCGCCAAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATCCCAGTGCTAGGGCATGCGGATGGTATCTGTCATGTGTATGTTGACAAGTCTTGTA 1692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAATCAGCTG 1668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGATCTTGTGATCCCAAGAGGCAGCAACAAGCTTGTTTCTCAGATAAAAAACTCAACGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCA 1548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2791 bp
                                                                                                            mRNA
                                                                                                          linear
                                                                                                          PLN 24-OCT-2003
                                                                                                                                                                                                                                                                                                                                                                                                                     2112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1512
                                                                                                                                                                                                                                                                          2232
                                                                                                                                                                                                                                                                                                                                                2172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1932
                                                                                                                                                                                                                                                                                                                                                                                  2148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
REFERENCE
                                  밁
                                                                   Ś
                                                                                                          밁
                                                                                                                                           S
                                                                                                                                                                               맑
                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                  맑
                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                       109
                                                                       409
                                                                                                          416
                                                                                                                                             349
                                                                                                                                                                               356
                                                                                                                                                                                                                                                                                          229
                                                                                                                                                                                                                                                                                                                              236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
 CCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCAT 528
                                                                     TGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCA 468
                                  TGGCTCTCTATGATACCATGTTCAGCCAGCTTGATGTGACTTCTTCCCAACTTCTTGTGA 535
```

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (26-FEB-2001) Satoshi Iuchi, RIKEN, Plant Molecular
Biology; kouyadai 3-1-1, Tsukuba, Ibaraki 305-0074, Japan
(E-mail:iuchi@rtc.riken.go.jp, Tel:81-298-36-4359,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids I; Fabales; Fabaceae; Papilionoideae; Phaseoleae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Iuchi,S.
Drought inducible gene from cowpea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fax:81-298-36-9060)
AAAAGCCACAAGGTGAGCTTGATGGTAAAGCATGTGCTGCTGTTGGGCAAAGTAGTCTCA 475
                                                                                                                                                                                                                                                                                                                                                          TCGATCCTTCCAGAGCTTTCGTCTCCAAGGTCAAGCGTCTCATTGTAAAGGTTGGAACAG 235
                                                                                                                                                                                                                     AGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTTG
                                                                                                                                                                                                                                                                  CTGTTGTTACTCGAAGTGATGGAAGATTGGCACTAGGTAGAATTTGGAGCTCTTTGTGAGC
                                                                                                                                                                                                                                                                                                             CAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGC 228
                                 AAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGA 408
                                                                                   GCCTTGGCAGGCAAAGACTTAGATATCGCAAATTGGCCAATAGCAGTTTTTCTGATCTTC
                                                                                                                                GAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGC
                                                                                                                                                                          AGCTTAAAGAACTTAGCTCTCAAGGATTTGAAGTCATACTGGTAACTTCAGGTGCTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 2791)
                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NYTYKELPLEA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FHNASTRFCDGARFGLGAEVGISTSRIHARGPVGVEGLLTNRWILRGSGHVVNGDQGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Vigna unguiculata"
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , 2003 this sequence version replaced gi:13161404
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene="VuP5CS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene="VuP5CS"
                                                                                                                                                                                                                                                                                                                                                                                                                                          43.8%; Score 1115.6; DB 8; 70.1%; Pred. No. 4.5e-267; ative 0; Mismatches 639;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               xref="taxon:3917"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 8; Length 2791;
                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                348
                                                                                     415
                                                                                                                                                                               3
5
5
                                                                                                                                                                                                                       288
                                                                                                                                                                                                                                                                    295
                                                                                                                                                                                                                                                                                                                                                                                                     168
                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

```
1549 TTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTA 1608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1316 GTCAAATTTTAAAAAGAACAGAGATAGCAGATAAACTCATCCTGGAGAAAATTTCATGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1076 AGAGTTCTAGAAGACTTCAGATCCTCAAATCTGAAGAAAGGAGTAAAATATTATTGGCAA 1135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1016 CTCACTTGTGGAGCAATATAAAĞGAAGAGAĞTGCACGTGAAATGGCAĞTTTCAĞCACĞCĞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1309 CATTAGGTGTTCTCTTAATTGTTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCAT 1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1249 ACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1256 AGAAGATCTCTAAGCTTGCAAAGTCTGTGCGCATGTTGGCAGCTATGGAAGAACCAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1189 GAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAA 1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              956 CAAACAATATCATACGGGTTCTTCAAGGGGAAAGAATAGGTACTGTCTTTCATAAAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            889 ATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACAAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               в29 АGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 836 GGGAAATTACTTTTGGAGACAAGTCAAGATTGGGAAGAGGGGGGTATGACTGCTAAAGTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   769 AAGAAATCACTTTTGGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     776 GTCCTCCAAGTGACCCAAAACTCAAAGTTGATCCACACATATGTGAAGGAGAAACATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          649 CACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     589 CTCCATATGAGGATTCATCTGGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        596 TATTAGATTTAAGGGTTATCCCCCATTTTCAATGAAAATGATGCTGTTAGTACTAGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               536 ATGATGGATTTTTTAGGGATGCTGGCTTCAGAAAACAACTTTCGGACACAGTGAACGCGT
                                                                                                                      TTATTGGCCTTGTGAATTCAAGAGATGAAATTCCATACCTACTTAAGCTTGATGATGTGA 1615
                                                                                                                                                                                                    TTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCA 1548
                                                                                                                                                                                                                                                                              CAAATGCAATCTTACACAAGGTCATTACTTCGGTGATTCCAAATACCGTAGGTGACAAAC
                                                                                                                                                                                                                                                                                                                                                        CAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAAAC 1488
                                                                                                                                                                                                                                                                                                                                                                                                                                      CATTGGCAATTCGAAGTGGGAATGGTTTACTGCTTAAAGGTGGAAAAGAAGCCCAACGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGGAAGCTATCAGAT 1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTTGGGAGTCCTTCTGGTTATATTCGAGTCTCGACCAGATGCCCTTGTGCAGATAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGCTGATGCATTGGAGAAAAATGCAAGTGCAATAAGTCTTGAGAATGAAGCTGATGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATATTGCTAGATG 1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGCTGCGGTTTGTGCTCCTCATGCTGGTATCCCTGTCATTATAACTAGTGGCTATGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAAAAGCATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCTTAGAACTTAAAGCTGATCTTCTTGTTTTATTGAGTGATGTTGAGGGCCTTTACAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACCATACGAGGATTCTTCTGGTATTTTCTGGGACAATGACAGTTTGGCTGGACTATTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGATGCTGCTGCTGGATATGAAAATTCGTTGATATCACGTTTAACCCTGAAACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               595
                                                                                                                                                                                                                                                                                  1555
                                                                                                                                                                                                                                                                                                                                                                                                                                      1495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            529
```

Ś 밁 Ś

Ś 멂 δ 뮍 S

밁 δ 밁 Ş 밁

뮍

8 밁 Ş B Ś 밁 Ş 맑 Ś 밁

```
RESULT 14
AF314811
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       よ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                              SOURCE
                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                      VERSION
                                                                                                                                                                          ACCESSION
                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                       2276 AAGGAATCAATTÁCACGTÁCAAGGAATTGCCACTAGAA 2313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1616 TAGATCTTGTGGTCCCAAGAGGCAGTAATAAACTTGTTTCTCAAATCAAGGAGTCAACAA 1675
                                                                                                                                                                                                                AF314811
2551 bp mRNA linear PLN 06-FEB-20
Brassica napus delta 1-pyrroline-5-carboxylate synthetase A mRNA,
Brassica napus Brassica napus Bukaryota; Embryophyta; Tracheophyta; Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Brassica
                                                                                                Brassica napus (rape)
                                                                                                                                                   AF314811.1 GI:12667248
                                                                                                                                                                                                 complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGATICCIGITCIIGGGCAIGCIGAIGGTATAIGCCACGIATATAIIGACAAAICAGCIG 1668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCTGGGATTTCCAAAAGCTGTTTCATTCATCATGAGTATAGTTCTATGGCCTGCACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCAATGGAAACTCTTCTTGTACACAAGGATCTATCAAACAATGGTGGACTTAATGAGC 1855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCCTGCA 1728
                                                                                                                                                                                                                                                                                                                                                                                                                  AGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAA 2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGGTTTATTGACGAACAGATGGATATTGAGAGGGAGTGGGCATGTGGTTAATGGAGATC 2275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTGACA 2208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGGTGCAGAGGTTGGAATTAGCACAAGTCGAATTCATGCACGAGGCCCAGTAGGAGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAGTGCTGCAGTTTTCCACAATGCAAGTACACGATTTTGTGATGGAGCACGCTTTGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATACTGAATGCATTGTTACAGAAGATCGTGAAGTTGCTGAGACTTTCTTAAGTCAAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGATTGATATGGCAAAACAGATTATTAGAGATGCAAAGACTGATTATCCTGCAGCCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAATTCCTGTTCTTGGACATGCTGATGGAATTTGTCATGTATATGTCGACAAATCAGCTA 1735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGTCGTTGAACTCCAACGTGAAGGTGTTAAACTGTATGGTGGACCAAGAGCTAGTGGCA 1915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACA 1788
                                                                                                                                                                                                                                                 PLN 06-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2095
```

REFERENCE

REFERENCE AUTHORS JOURNA Unpublished (bases 1 to 2551

synthetase A in Brassica napus Kang, Y.H. and Lee, S.Y.
Isolation of a gene encoding the delta 1-pyrroline-5-carboxylate

JOURNAL AUTHORS 2 (bases 1 to 2551)

Kang,Y.H. and Lee,S.Y.

Direct Submission

Submitted (19-OCT-2000) Lab. of Biochemistry, Graduate School

Submitted (19-OCT-2000) Lab. of Biochemistry, Graduate School

Biotechnology, 1, 5-ka, Anam-dong, Sungbuk-ku, Seoul 136-701, Rep.of Korea

of.

Ş 밁 Ş 밁 Ś 밁 Ş В S 밁

B

FEATURES source Location/Qualifiers

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                             맑
                                                                                             Ś
                                                                                                                                                   밁
                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 1508;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          313
                                                                                                                                                   809
                                                                                                                                                                                                                                                   548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                193
                                                                                                   673
                                                                                                                                                                                                613
                                                                                                                                                                                                                                                                                                      553
                                                                                                                                                                                                                                                                                                                                                   488
                                                                                                                                                                                                                                                                                                                                                                                                    493
                                                                                                                                                                                                                                                                                                                                                                                                                                                      428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             188 GATTGGCTCTTGGTCGCCTAGGAGCTCTGTGTGAACAGCTTGCGGAATTAAACTCGGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                128 AAGACGTCAAGCGTATCGTCGTTAAGGTTGGAACAGCTGTTGTAACTGGGAAAGGTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              133 GGGACGTGAAGCGCGTCATCATCAAGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAA 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    73
  AAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGAAATCACTTTTGGAGACAAAT 792
                                                                                                                                                                                                                                                                                                      TATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGGATTCATCTGGTA 612
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCAGCTGGATGTGACGGCTGCTCAGCTGCTGGTGAATGACAGTAGTTTCAGAGACAAGG 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTCATGGCTTATTATGAGACTATGTTTG 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACGATATGTTGTTTA 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAGACAGTTAGTCAATAGCAGCTTTGCGGATCTCCAGAAGCCTCAGCATGAACTAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAAGCCACAGATGGAGTTAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATTTGAGGTGATCTTGGTGATCAGGTGCGGTTGGCCTTGGCCGCCAAAGGCTTCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATACGAAGTGATTTTGGTCACCTCAGGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAGGAGGTTTTGGTAGGCGGGGACAATGGAGGAGCTAGATCGTTCACGCGCTTTTCGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCTGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGA 132
                                                TGATTCTTCTGAGTGATGTCGAAGGTCTTTACACTGGCCCTCCAAGTGACCCTAACTCAA 727
                                                                                                TTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTGAACCATCATCAA 732
                                                                                                                                                TCTTTTGGGATAACGACAGCTTAGCTGCTCTATTGGCGCTGGAGCTGAAAGCTGATCTTC
                                                                                                                                                                                              TATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGAAAGCTGATCTCC
                                                                                                                                                                                                                                                   TTTTCAATGAGAACGATGCTATTAGCACCAGAAGAGCTCCTTATCAGGATTCATCTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                    AGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTAAAGTTATACCAA 552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATTTTGAGAACCCAA 492
                                                                                                                                                                                                                                                                                                                                                      AGTTCAGGAAGCAACTTAATGAGACAGTGAAGTCCATGCTTGATTTGAGGGTTATTCCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LMAYYETMEDQLDVTAAQLLVNDSSFRDKEFRKQLNETVKSMLDLRVIPIFNENDAIS
TRRAFYQDSSGIFWDNDSLAALLALELKADLLILLSUVEGLYTGAPSDPNSKLIHTFI
KEKHQDEITFGDKSRLGRGMTAKVKAAVNAN, KGIFVIITTGYSAAENDKYLLGHEFI
GTIFHQDARLMAPITDSTARDMAVAKRASRKALQALSSBDRKQILYSIADALEANEKT
GTIFHQDARLMAPACEAGLEESLVARLVMTPAKLSSLAASVKLADMEDDIGKULKKTEV
ADGLVLEKTSSPLGVLLIVFESRPDALVQIASLAIRSGNGLLLKGGKEARRSNAILHK
VITDAIDSTVGGKLIGLVTSREBIPDLLKLDDVUDLVIFRGSNKLVGQIKUTTKIPL
CHADGICHVYDKACNVDMAKRIVSDARLDYPAACNAMETLLVKGLBONAVLNELIF
ALQSNGVTLYGGPKASKILNAPERARSPNELSFARCKACTVEVVEDVGAVDHIHRHGSAH
TDCIVTEDPENAELFLRQVDSAAVFHNASTRFSDGFRFGLGAEVGISTGRIHARGPVG
VEGLLTTRMIMRGKGQVVDGDNGITYTHQDIPIQA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LAELNSDGFEVILVSSGAVGLGRQRLRYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon_start=1
/product="delta 1-pyrroline-5-carboxylate synthetase
/protein_id="AAK01360.1"
/db_xref="GI:12667249"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="Bnp5cs1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           organism="Brassica napus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mol_type="mRNA"
'db_xref="taxon:3708"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   translation="MEELDRSRAFAKDVKRIVVKVGTAVVTGKGGRLALGRLGALCEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      43.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 1108.4; DB 8; Length Pred. No. 2.8e-265; O; Mismatches 666; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 2551;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      127
                                                                                                                                                     667
                                                                                                                                                                                                      672
                                                                                                                                                                                                                                                      607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                           岁
                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뛿
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                          Ś
                                                                          밁
                                                                                                                        S
                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1148
1813 GAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTCTGGGATTTCCAAAAGCTGTTT 1872
                                                                                                                                                                                                                                                                                                                                                                                 1568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      728 ÁGCTGÁTCCACACCTTCÁTCAAGGAGÁAACATCAAGACGAGATTACATTTGGCGACAAGT 787
                                                                             ATAAGGATCTGGAGCAGAACGCTGTGCTCAATGAGCTTATATTTGCTCTGCAGAGCAATG
                                                                                                                                                                                                                                                                                                                                 ATGGTATATGCCACGTATATTGACAAATCAGCTGACATGGATATGGCAAAACTTATTG 1692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCACCTCCAAGAGGAA 1572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAACTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAG 1512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TIGCTGATGATTAGTICTTGAGAAAACATCTIGCCCATTAGGTGTTCTCTTAATTGTTT 1332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGGACTGCGTGTTGGAACCTTGTTCCATCAAGATGCTCGTTTATGGGCTCCTATCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGGGGAAAAATTGGTACTCTCTTTCACAAGAATGCGAATTTGTGGGAATCATCTAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGGTATCCCTGTCATCATAACCAGTGGCTATGCAGCTGAGAACATAGATAAAGTCCTTA 907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGGCACACCTGTGGTTATTACAAGTGGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTC 912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATA 852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGAGATTCCTGATTTGCTCAAGCTTGATGACGTTATTGATCTTGTGATCCCAAGAGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCTTCTATTGAAGGGTGGAAAGGAGGCCAGGAGATCAAATGCTATCTTACACAAGGTGA 1447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCTTCTCCTAAAAGGTGGAAAAAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTA 1452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGAGTCTCGACCTGATGCACTTGTACAGATAGCTTCACTTGCTATCCGGAGTGGAAATG 1387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TIGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATG 1392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGAGTCATTGGTGGCTCGTTTGGTGATGACACCTGCAAAGATCTCGAGCCTTGCAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTCTACTGCTCGTGACATGGCAGTAGCTGCGAGGGAAAGTTCCAGGAAGCTTCAGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAGACTAGGAAGAGGCATGACTGCAAAAGTGAAAGCTGCAGTGAATGCAGCTTATG 847
                                                                                                                           ATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAG 1812
                                                                                                                                                                             TTTCTGATGCAAAGTTAGACTATCCAGCAGCTTGTAATGCCATGGAAACTCTTCTTGTGC 1747
                                                                                                                                                                                                                        TAATGGATGCAAAAACTGATTACCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTC 1752
                                                                                                                                                                                                                                                                                                                                                                                 GCAACAAGCTTGTTTCCCAGATTAAAAACACTACAAAAATCCCTGTTCTTGGTCATGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                 GIAATAAGCTTGTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTG 1632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAACTGATGCTATTCCAGAGACTGTTGGTGGTAAACTCATTGGACTTGTGACTTCAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGCAGATGGTCTTGTTTTGGAGAAGACCTCATCCCCATTAGGCGTACTCCTGATTGTTT 1327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGTTCGTAAGCTAGCTGATATGGAAGATCCAATTGGCCGTGTTCTAAAGAAAACCGAGG 1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTATTCGTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTAAAAAGACAGAGG 1272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAAGCCTTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAAT 1212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAAAACAATCAGAGCTGAGAATGAATTAGATGTGGCTACAGCACAAGAAGCTGGACTTG 1147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATG 1152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATCTTCGGAGGATAGGAAGCAGATACTGTATAGTATCGCAGATGCTCTTGAAGCAAATG 1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ТСТСАТСАСАСБАВССАЛАЛАЛАВСТАТТССТАСАТСТТССАСАТССТТТССВАСССАЛАТС 1092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGCATCTACAGAATT 1032
                                                                                                                                                                                                                                                                           ATGGAATCTGTCATGTATATGTGGACAAGGCTTGTAATGTGGATATGGCTAAACGCATAG
```

1507

1687

1627

```
Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
ATP5CS2
                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŒYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                         PUBMED
                                                                                                   gene
                                                                     Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1873 CATTTCATCATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTGATGATGTTCAAT 1932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2228 ACATTCCCATCCAA 2241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2168 TAATGAGAGGAAAAGGACAÁGTTGTGGATGGAGACAATGGGATTACTTACACCCATCAAG 2227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2053 CAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1933 САССАЛТТСАССАТАТТСАТССТТАТССАЛАСТССТСАТАСАСАТТСТАТСТТАТССТСТАСАС 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1808 GAGTCACTTTGTATGGTGGACCAAAGGCAAGTAAAATACTTAACCTACCAGAAGCACGGT 1867
                                                                                                                                                                                                                                                 Direct Submission
Submitted (11-NOV-1996) N. Strizhov, Max-Planck-Inst. fuer
Submitted (11-NOV-1996) J. Schell, Carl-Von-Linne-Weg 10, D-50829
                                                                                                                                                                                                                                                                                                                                                                                    Strizhov,N., Abraham,E., Okresz,L., Blickling,S., Zilberstein,A., Schell,J., Koncz,C. and Szabados,L.
Differential expression of two PSCS genes controlling proline accumulation during salt-stress requires ABA and is regulated by ABA1, ABII and AXR2 in Arabidopsis
Plant J. 12 (3), 557-569 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P5CS2 gene; pyrroline-5-carboxlyate synthetase. Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
                                                                                                                                                                                                                  Corresponding genomic sequence: X86778 
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                         Strizhov, N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A.thaliana mRNA for pyrroline-5-carboxlyate synthetase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Y09355.1 GI:1669657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCTTCCTTTGCAA 2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCTTGCGAGGACGTGGGCAAGTGGTGAATGGTGACAAGGATGTCGTGTACACCCCATAAGA 2232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGGAGGATCCATGCCCGTGGTCCAGTGGGAGTAGAGGGACTACTTACAACCAGATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAACTACACGATGGA 2172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAGCACAAGATTCTCTGATGGTTTTCGATTTGGACTTGGTGCTGAGGTGGGGATAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCCCGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGACAGCGCTGCTGTTTCCACAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGTTCAATCACGAGTACTGTTCCAAGGCGTGCACTGTTGAAGTTGTAGAAGATGTTTATG 1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 2440)
                                                                                                                                                                                                                                                                                                                                       (bases 1 to 2440)
/gene="P5CS2"
/codon_start=1
/product="pyrroline-5-carboxlyate_synthetase"
/protein_id="CAA70527.1"
                                                                                                                                                   dus/
                                                                                                                                                                                                      1. .2440
                                                                                   /gene="P5CS2"
                                                                                                                                                                                    organism="Arabidopsis thaliana"
                                                                                                                 b_species="ecotype Columbia"
_xref="taxon:3702"
one="pNSZ1"
                                                                                                                                                                   _type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2440 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear PLN 15-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2052
                            S
                                                                   밁
                                                                                                 S
                                                                                                                                                                   S
                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                   밁
                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                         457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               73
       CTGCAAAAGTTAAAGCTGCTGTTAATGCAGCTTATGGTGGCGTTCCTGTTATCATAACCA
```

```
ADDIIIEKTSSPIGVLLIVFESRPDALVQIASIAIRSGNGLLLKGGKEARRSNAILHK
VITDALPETVGGKLIGLVTSRBEIPDLKLLDDVIDLVIPRGSRULVSQIKNSTKIPVL
GHANGIGHVYVDKSGKLDMAKRIVSDAKLDVSPACNAMETLLVHKDLBQNGFLDDLIY
VLQTKGYTLYGGSPASAKLNIETKSFHHEYSSKACTVEIVEDVYGAIDHIHQHGSAH
TDCIVTEDSBYAEIFLRQVDSSAVFHNASTRFSDGFRFGLGAFYGISTSRIHARGPVG
TDCIVTEDSBYAEIFLRQVDSSAVFHNASTRFSDGFRFGLGAFYGISTSRIHARGPVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="GI:1669658"
/db_xref="GOA:254888"
/db_xref="GOA:254888"
/db_xref="GNA:254888"
/db_xref="SNISG-PROT:P54888"
/translation="WTEDDRSRAFAKDVKRIVVKVGTAVVTGKGGRLALGRLGAICEQ
/translation="WTEDDRSRAFAKDVKRIVVKVGTAVVTGKGGRLALGRLGAICEQ
LAELNSDGFBYILVSSGAVGLGRQRLRYRQLVNSSFADLQKPQMELDGKACAGVGQSS
LMAYYETMFDQLDVTVAQMLVTDSSFRDKDFRKQLSETVKAMLRMRVIPVFNENDAIS
TRRAPYKDSTGIFMDNDSLAALLSLEKADLLILLSDVEGLYTGAFFSDSTSKLIHTFI
TRRAPYKDSTGIFMDNDSLAALLSLEKADLLILLSDVEGLYTGAFFSDSTSKLIHTFI
                                                                                                                                                                                                                                                                                                                                                          KEKHQDEITFGEKSKLGRGGMTAKVKAAVNAAYGGVPVIITSGYAAENISKVLRGLRV
GTLFHQDAHLWAPVVDTTSRDMAVAARESSRKLQALSSEDRKQILHDIANALEVNEKT
IKAENDLDVAAAQEAGYEESLVARLVMKPGKISSLAASVRQLAEMEDPIGRVLKKTQV
VEGLLTTRWIMRGKGQVVDGDNGIVYTHKDLPVLQRTEAVENGI"
```

Matches 1492; n 43.1%; Score 1099.6; DB 8; Length 2440; Similarity 69.5%; Pred. No. 4.4e-263; 92; Conservative 0; Mismatches 654; Indels 0; CAGCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAA 876 AAAAACACCAGGACGAGATTACTTTTGGCGAAAAGTCCAAATTAGGACGAGGGGGTATGA GGTTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAG GCÁCTCGCAGAGCCCCCTACAAGGATTCTACTGGTATATTTTGGGATAATGACAGCTTAG AGAGTGGACTGATGGCTCTTTACGATATGTTGTTTTAACCAACTGGATGTCTCGTCATCTC 456 TTGCAGATTTACAGAAGCCACAAATGGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGGC AGGTTGGGACTGCAGTTGTTACTGGGAAAGGTGGAAGATTGGCTCTTGGACGTTTAGGAG CTATGACGGAGATCGATCGTTCACGCGCGTTCGCCAAAGACGTTAAGCGTATCGTCGTCA 132 CCATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCA 156 CCGCTCTTCTGTCGCTAGAGCTGAAAGCTGATCTTTTGATTCTTCTAAGTGATGTTGAGG CAGGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATG GCACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAG CTGTCAAAGCGATGCTGAGGATGAGGGTTATTCCAGTTTTCAATGAGAATGATGCTATAA CTGTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCA 576 AAATGCTTGTGACCGATAGCAGTTTTAGAGATAAGGATTTCAGGAAGCAACTTAGTGAAA 492 AACTICTTGICACCGACAGTGATTTTGAGAACCCCAAAGTTCCGGGAGCAACTCACTGAAA 516 AGAGCAGTCTCATGGCTTACTATGAGACTATGTTTGACCAGTTGGATGTGACGGTTGCTC TIGCIGATCIGCAAAAGCCACAGAIGGAGITAGAIGGAAAGGCITGIGCCGCIGTIGGIC 396 CTGGTGCCGTTGGTCTTGGTCGACAAAGGCTTCGATACAGACAATTAGTCAACAGCAGTT CAGGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCT 336 CTATCTGTGAACAGCTTGCGGAGTTAAACTCAGATGGATTTGAGGTCATTTTGGTGTCAT CTCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCT AGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAG 216 792 552 432 372 312 276 192 756 672 696 612 636 0

1717 1693 1777 1753 1837 1813 1897	1393 1477 1453 1537 1513 1597 1573 1657	997 997 057 053 1117 117 1153 177 177 2237 2237 2237 357 357	877 853 937
CAGCAGCCTGCAATG	CTCGTCGHT CTCGTCGHT GTGAAAAAC GAGGTAAAC ATGATGTCA ATGACGTTA AGTCTAACTA AGTCTAACTG AGTCTAACTG AGTCTAACTG AGTCTAACTG AGTCTAACTG AGTCTAACTG AGTCTAGCTG AGTCTAGCTG AGTCTAGCTGTA	GCCGCAGAGAT GCCGCAGAGAT TTGCTAGAT TTAGATGTA TTAGATGTA TTAGATGTA TTAGATGTT ATAAAACCA ATAAAACCA ATAAAACCATATAAACCT ATAAAACCT ATAAAAACCT ATAAAAACT ATAAAACT ATAAAAACT ATAAAAAACT ATAAAAAACT ATAAAAAACT ATAAAAAAAA	GTGGGTTTGAAAATO
CAATGGAGACCTI	GEGETTETTALA GEGECTTGTTACA [TITTATIGGETCE TITTATIGGETCE TITTATIGATE TITTATIGAT TITTATICGAT TITTATICCAT TITTATICCAT TITTATICCAT TITTATICCAT TITTATICCAT TITTATICCAT TITTATICCAT	GUATTOTTA
AGTTC	CTA AGG	AGACTTTGTCAT AGGCCTTATCT AGGCCTTATCT AATTGAGAAA AATTTGAGAAA AATTTGAAAAAA AATTTGAAAAAAAA	TCTTCATGGGC
ATCTTATGAAGAGT	CAAATTCI COAGATTCI COGATTCI COGATTCI COGATTCI COGATTCI COGATTCI COAAAACCI COAAACCI COAACCI COAAACCI COAAACCI COAAACCI COAAACCI COAAACCI COAAACCI COAAACCI COAACCI COAACCI COAACCI COAACCI COAACCI COAACCI COAACCI COAACCI COAACCI COACCI COAC	AGGAACGAAAAA AAAAAAGATTAGAAA TAAAGTTGCAAATA TGTTAGTTGCTAGAI TGTTAGTTGCTAGAI AGTTAGTTGCTAGAI AGTTAGTTGTTATTTAAA ATTTAGTTGTTATTTTAG AGTTGTTAGTTGTTATTTTAG AGTTGTAGTGTAGTA	HAAAAATTGGTACTC
CAG 17 GTT 17 CTA 18		111111111111111111111111111111111111111	TCT 93 TGT 91
3 5 7 9 1 3 5 7 6	192 5 5 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	ט א א ָא

Ś

5

밁

뫄	Ą	문	8	망	8	뮍	Q	B	S,
2173 TGGATGGAGCAATGGAATCGTTTACACCCATAAGGATCTTCCTGT 2218	2197 TGAATGGTGACAAGGATGTCGTGTACACCCCATAAGAGTCTTCCTTT 2242	2113 CAGTTGGAGGATTATTGACAAGATGGATAATGAGAGGAAAGGTG 2172	2137 CAGTGGGTGTTGAAGGTCTTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGG 2196	2053 TTAGGTTCGGACTTGGTGCTGAGGTGGGAATAAGCACAAGCAGGATTCATGCCCGTGGTC	' 2077 CTCGTTTTGGATTGGGTGGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGAC	1993 TCCGCCAAGTGGACAGTGCTGCTGTTTTCCACAATGCACAAGCACAAGATTCTCTGATGGTT 2052	2017 TACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGG	1933 ATGGAAGTGCACACACTGATTGCATAGTGACGGAAGATAGTGAAGTAGCAGAAATATTCC 1992	1957 ATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTC 2016
		TTG 2172	TGG 2196	GTC 2112	GAC 2136	GTT 2052	3GG 2076	rcc 1992	ITC 2016

Search completed: March 10, 2004, 19:21:58
Job time: 9582.21 secs

```
Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                          Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                       Database :
                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   March 10, 2004, 09:18:05; Search time 874.351 Seconds (without alignments)
12384.789 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-10-026-767-1
2549
                                                                                                                                                            N_Geneseq_29Jan04:*
1: geneseqn1980s:*
2: geneseqn1990s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                 3373863 seqs, 2124099041 residues
                                                                                                                                                                                                                                            Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gcggctgcggcaaggcg.....tgtgattgcacatatactaa 2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.
                   geneseqn2003bs:*
geneseqn2003cs:*
                                                                              geneseqn2001as:*
geneseqn2001bs:*
geneseqn2002s:*
                                                          geneseqn2003as:*
                                                                                                                                           geneseqn2000s:*
geneseqn2004s:*
                                                                                                                                                                                                                                                                                                                                                                                            6747726
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Query Match Length	DB	ID	Description
	2549	100.0	2549	7 :	ABX93777	Abx93777 Rice del
N	2502	98.2	54	N	AAV15744	Rice
ω	0	43.0	2181	σ	ABZ14061	Arabi
4.	1092.8	42.9	2417	N	AAQ68841	
5	092	42.9	2417	N	AAT77279	_
თ	1085.6		2154	σ	ABZ13586	
7	1085.6		2273	W	AAC42463	
80	1085.6	42.6	2571	7	ABX93778	Abx93778 Thale cre
9		24.3	1343	w	AAC44944	α.
10		13.4	3256	ø	ADD18749	Add18749 Human di
11	321	12.6	476	w	AAC38250	Aac38250 Zea mays
12	304.		564	7	ABX57016	σ
.13	278.2	10.9	2507	w	AAC78003	
14	276.4	10.8	2849	4	ABL12989	
,_	245.4	9.6	110000	o,	ABA90521_16	Continuation (17
c 16	243.2	9.5	792	თ	ABN99076	Abn99076 Arabidops
17	194	7.6	110000	σ	ABN71527_02	Continuation (3 of
	192	7.5	4763	σ'n	ABQ70922	Abq70922 Listeria
	191	7.5	1257	7	ACA27795	
20	190.6	7.5	291	7	ABX86031	Abx86031 Corn ear-
	190	7.5	63020	σ	ABQ67197 11	Continuation (12
c 22	190	7.5	110000	σ	닏	Continuation (1
23	ת מר					

																					G
А Л	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24
126.8	129.6	130.8	131.2	133.6	134.4	140	142.2	142.2	143.6	147.6	155.2	159.2	159.2	160.2	166.6	169.8	171.6	173.4	176.4	177	182.2
, O	5.1	5.1	5.1	5.2	5.3	ຫ. ຫ	٠ 6	5 6	5.6	ت. 8	6.1	6.2	6.2	6.3	6.5	6.7	6.7	6.8	6.9	6.9	7.1
1245	1263	1248	1278	1251	1263	256	1251	1248	1233	5850	594	7696	7696	261	1248	1371	403	1251	418	1251	110000
7	7	7	œ	7	7	7	7	Q	7	N	7	σ	N	7	7	7	7	σ	7	7	თ
ACA32834	ACA43082	ACA36547	ADA32517	ACA37047	ACA20747	ABX85205	ACA50629	ABN67489	ACA30306	AAX83476	ABX56679	ABS99269	AAX13474	ABX83156	ACA48457	ACC61721	ABX62632	ABN67488	ABX62288	ACA45031	ABA03041_12
Aca32834	Aca43082	Aca36547	Ada32517	Aca37047	Aca20747	Abx85205	Aca50629	Abn67489	Aca30306	Aax83476	Abx56679	Abs99269	Aax13474	Abx83156	Aca48457	Acc61721	Abx62632	Abn67488	Abx62288	Aca45031	Continuation
Prokarvot	Prokaryot	Prokaryot	DNA encod	Prokaryot	Prokaryot	Corn ear-	Prokaryot	Streptoco	Prokaryot	Group B :	Arabidops	Enterococ	Enterococ	Corn ear-	Prokaryot	Gene sequ	Arabidops	Streptoco	Arabidops	Prokaryo	tion (13 c

ALIGNMENTS

ABX93777; ABX93777 standard; cDNA; 2549 BP. 17-JUN-2003 (first entry)

Rice delta^1-pyrroline-5-carboxylate synthetase (P5CS) cDNA.

Rice; grass; delta^1-pyrroline-5-carboxylate synthetase; P5CS; gene; ss; proline dehydrogenase; ProDH; stress tolerance; water tolerance; calli; salt stress; salinity tolerance; temperature tolerance; protoplast; proline accumulation.

Oryza sativa.

r r r r X X	XXXX	PA PA PA PA	XXXX	g X	Z Z	X F F F F F	\$ 8 \$	* 	Z H X H	ž č	RESULT 1 ABX93777 ID ABX
New grass plant overexpressing a PSCS gene trom r transgenic plants with higher levels of proline a more improved salinity-tolerance, drought-toleran tolerance. Claim 1; Page 22-29; 52pp; English.	; 2003-203644/20. SDB; ABU09029.	(HITA) HITACHI LTD. (BIOO-) BIO-ORIENTED TECHNOLOGY RES ADVANCEMENT. (INDE-) INDEPENDENT ADMINISTRATIVE INST NAT INST. (RIKE) RIKEN KK. Yoshiba Y, Shinozaki K;	24-DEC-2001; 2001GB-00030946. 08-JUN-2001; 2001JP-00174553.	DEC-2002.	GB2376236-A.	Key Location/Qualifiers CDS 992249 /*tag= a /product= "Rice PSCS"	Oryza sativa.	Rice; grass; delta^1-pyrroline-5-carboxylate synt: proline dehydrogenase; ProDH; stress tolerance; w salt stress; salinity tolerance; temperature tole proline accumulation.	17-JUN-2003 (first entry) Rice delta^1-pyrroline-5-carboxylate synthetase (ABX93777;	LT 1 3777 ABX93777 standard, cDNA, 2549 BP.

New grass plant overexpressing a P5CS gene from rice, useful for making transgenic plants with higher levels of proline accumulating ability, and more improved salinity-tolerance, drought-tolerance and low temperaturetolerance.

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     X66666666666668X&
                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                 Ş
                                                                             맑
                                                                                                                  Ş
                                                                                                                                                            ₽
                                                                                                                                                                                                  5
                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Sim
Matches 2549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to a grass plant in which a delta^1-pyrroline-5-carboxylate synthetase (P5CS) gene of rice, or a P5CS gene of Arabidopsis thaliana and the antisense gene of a proline dehydrogenase (ProDH) gene of Arabidopsis thaliana, have been introduced in tandemly connected relation to each other. A new method of the present invention is useful for the production of a transgenic rice plant with improved stress tolerance, especially for water or salt stress and low temperatures. The invention provides for transgenic plants with a higher level of proline accumulating ability. The invention also relates to a grass plant obtained by introducing a vector comprising a gene of the invention into a calli or protoplast derived from a grass plant, growing the calli or protoplast derived from a grass plant, growing the calli or colony. This sequence represents DNA encoding the rice P5CS polypeptide of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2549 BP; 719 A; 453 C; 648 G; 729 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                               661
                                                                                                                       199
                                                                                                                                                              601
                                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                               421
                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121
721
                                     721
                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGCAGGTTAAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGGCTGCGGCGAAGGCGAGACGTGGGAGAGGGATTTACAGGTAGAGGGAGAGGG
                                                                                                                                                                                                                                                                                                                                                                   TTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTA
                                                                                                                                                                                                                                                                                                                                                                                                               ATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                              ATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TEGAGTTAGATEGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAAGCCACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTTGGAGTGGGGCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTTGGAGTGGGGGCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGCAGGTTAAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAGCTTCGTGAGGGACGTGAAGCGCGTCATCAAGGTGGGCACTGCAGTTGTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGAGGAGAGAGCTGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCGACCCGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGAGGAGGAGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCGACCCGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGGCTGCGGCGAAGGCGGCGAGACGTGGGAGAGGGATTTACAGGTAGAGGGAGAGGG
AACCATCATCAAAAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGAAATCACTT
                                     AACCATCATCAAAAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGAAATCACTT
                                                                                                                    AAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTG
                                                                                                                                                                                                                                              AAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGG
                                                                                                                                                                                                                                                                                     AAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACG
                                                                                                                                                              ATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGA
                                                                                                                                                                                                      ATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Score 2549; ilarity 100.0%; Pred. No. 0; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAAGCCACAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 7; Length 2549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
    780
                                                                                                                                                                 660
                                                                                                                                                                                                        660
                                                                                                                                                                                                                                                  600
                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                  540
                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                       S
                                                                                                                                                                                  밁
                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                   片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    胺
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                      멂
                                                                                                     유
                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1021
                                                                                                                                                                                       1681
                                                                                                                                                                                                                                                                      1621
                                                                                                                                                                                                                                                                                                              1621
                                                                                                                                                                                                                                                                                                                                                     1561
                                                                                                                                                                                                                                                                                                                                                                                             1561
                                                                                                                                                                                                                                                                                                                                                                                                                                     1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1381
                        1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACAAGAATGCGAATTTGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAAAATCGGAGCATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAAGTGAAGGCTGCTGTCT
                      TAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTCTGGGATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGGAAGCTATCAGATCAAACACGATAT 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTTAATTGTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTC 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCCATTAGGTGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCTACAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGATGTTGCAGATGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCTACAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGATGTTGCAGATGCTT 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACAAGAATGCGAATTTGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTTGAAAATCGGAGCATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTGGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGTGAAGGCTGCTGTCT
                                                             TAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTCTGGGATTTC
                                                                                                                                    CCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCAC
                                                                                                                                                                                                                            сададсттаттоталтосатосалалалстсаттасссассасстссатосатосатосаса
                                                                                                                                                                                                                                                                                                                                                     CTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTC
                                                                                                                                                                                                                                                                                                                                                                                             CTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTC 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                     TTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCA 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAAACTTATTGGCCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCATTAGGTGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAAACCAGGAAAGATAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>AATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGC</u>
                                                                                                                                                                                  CAAAACTTATTGTAATGGATGCAAAAAACTGATTACCCAGCAGCCTGCAATGCAATGGAGA
                                                                                                                                                                                                                                                                      TTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAATCAGCTGACATGGATATGG
                                                                                                                                                                                                                                                                                                            TTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAATCAGCTGACATGGATATGG
                                                                                                       CCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCAC
```

1200

1200

1140

1320

1320

1440

1360

1500 1500

1560

1740

1680 1680 1620

1800

1800

1860

1860

1020

1080

960

900

900

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                  03-MAR-1998
                                                                                                                                                                                                                 Rice; delta-1-pyrroline-5-carboxylate synthase; salt resistance; moisture loss; ds.
                                                      JP10057069-A.
                                                                                                                                                                                                                                                                  Rice delta-1-pyrroline-5-carboxylate synthase cDNA.
                                                                                                                                                                                                                                                                                                        05-JUN-1998
                                                                                                                                                                                                                                                                                                                                          AAV15744;
                                                                                                                                                                                                                                                                                                                                                                            AAV15744 standard; cDNA to mRNA; 2549 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1861 CAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTTGTTG 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTAACATCTGTGATTGCACATATACTAA 2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGCTTGTAATGAGCGAT 2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAAAGCTGTTTCATTTCATGATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTG 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTTAGCCTGTTCAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTGACAAGGATGTCGTGT 2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TIGGCATAAGCACAGGGGGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAA 2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGG 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTG 2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGATTGTA 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAAAATAAATTCATCAGTTCTGAGAGCAAGATTTTGGAGGTTCAGCTTCTCCATGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTTAGCCTGTTCAGGAG 2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTGACAAGGATGTCGTGT 2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGGCATAAGCACAGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAA 2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGATTGTA 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGCTTGTAATGAGCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAAAATAAATTCATCAGTTCTGAGAGGCAAGATTTTTGGAGGTTCAGCTTCTCCATGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTATTGCGGCATTCCGATGGATTATTGATTTTGGGGGGTTCCCACTTTCAAATGTGACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTATTGCGGCATTCCGATGGATTATTGATTTTGGGGGGTTCCCACTTTCAAATGTGACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTG
                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                        Location/Qualifiers 99. .2249
                                                                                      /product= "delta-1-pyrroline-5-carboxylate_synthase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2280
                                                                   8
                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                         밁
                                                                                                                                       Ś
                                                                                                                                                                             밁
                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 2516;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 98.2%; Score 2502; DB 2; Length 2549; Best Local Similarity 98.7%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence encodes rice delta-1-pyrroline-5-carboxylate synthase, which can be used to provide salt resistance and prevent moisture loss in plants, improving crop yield
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rice delta-1-pyrroline-5-carboxylate synthase gene - useful for providing salt resistance and preventing moisture loss in plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1998-210402/19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22-AUG-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-AUG-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2549 BP; 719 A; 453 C; 648 G; 729 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; Page 3-9; 9pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-PSDB; AAW47389.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HITA ) HITACHI LTD.
                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                               541
                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             181 GACAAGATGGAAGATTGGCTTTGGGCGTTGGAGCTCTGTGCGAGCAGGTTAAGGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTTGGAGTGGGGGGGAC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGAGGAGGAGAGGCTGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCGACCCGTCCC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGGCTGCGGCGAAGGCGGCGAGACGTGGGAGAGGGAATTTACAGGTAGAGGGAGAGGG 60
     AACCATCATCAAAAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGAAATCACTT
                                                                     AAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTG 720
                                                                                                         ATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGA
                                                                                                                            ATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGA 660
                                                                                                                                                                               AAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGG
                                                                                                                                                                                                        AAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGG
                                                                                                                                                                                                                                                                                     TTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTA 540
                                                                                                                                                                                                                                                                                                                                              ATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATT 480
                                                                                                                                                                                                                                                                                                                                                                                               TGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACG
                                                                                                                                                                                                                                                                                                                                                                                                                       TGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAAGCCACAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCACTGCAGTTGTCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAGGTGGGCACTGCAGTTGTCTCCA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGAGGAGGAGGCTGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCAAGGTGGCG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGGCTGCGGCGAAGGCGGCGAGACGTGGGAGAGGGGATTTACAGGTAGAGGGGAGAGGG
                                                                                                                                                                                                                                                     TTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTA
                                                                                                                                                                                                                                                                                                                         ATATGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAAAGCCACAGA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGCAGGTTAAGGAAC 240
                                     AAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            96JP-00221465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96JP-00221465.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches 33; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

60

0

300

240

540

660

600 600 420

420

```
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                   Ş
                                                       B
                                                                                       Ś
                                                                                                                               밁
                                                                                                                                                             Ś
                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1021
                                                                                                                                                                                                                                                                                                                                                                                                                                  1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1081
1801 TAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAAGCTCTGGGATTTC 1860
                                                                                                                                                                     1681
                                                                                                                                                                                                                                                                                  1561
                                                                                                                                                                                                                                                                                                                                                                                              1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1021 ATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATATTGCTAGATGTTGCAGATGCTT 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721 AACCATCATAAAAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGAAATCACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        781 TTGGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGTGAAGGCTGCTGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACGATAT 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGGAGACAAATCTCGTGTAGGTAGAGGGAGGCATGACAGCAAAAGTGAAGGCTGCTGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACAAGAATGCGAATTTGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCCATTAGGTGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAAAAATCGGAGCATTC
                                                                                                                                                             CAAAACTTATTGTAATGGATGCAAAAACTGATTACCCCAGCAGCCTGCAATGCAATGGAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTC 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCATTAGGTGTTC 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTCTTCACAAGAATGCGAATTTGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAAAATCGGAGCATTC
                                                         CCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCAC
                                                                               CCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCAC 1800
                                                                                                                               CAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCCTGCAATGCAATGGAGA
                                                                                                                                                                                                                                          TTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAATCAGCTGACATGGATATGG 1680
                                                                                                                                                                                                                                                                                CTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTC
                                                                                                                                                                                                                                                                                                          CTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTC
                                                                                                                                                                                                                                                                                                                                                            TTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCA
                                                                                                                                                                                                                                                                                                                                                                                    TTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTG 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACGATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTA 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTA 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAA 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCTACAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGATGTTGCAGATGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATCATCTAAGGATGTTAGTACTCGTGAGAGTGGCTGTTGCCGCAAGAGATTGTTCAAGGC
                                                                                                                                                                                                                                                                                                                                                                                              1560
                                                                                                                                   1740
                                                                                                                                                                                                           1680
                                                                                                                                                                                                                                                                                    1620
                                                                                                                                                                                                                                                                                                                        1620
                                                                                                                                                                                                                                                                                                                                                              1560
                                                                                                                                                                                                                                                                                                                                                                                                                                    1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              780
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                       ₽
                                                                                                         Ś
                                                                                                                                                  밁
                                                                                                                                                                                 S
                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
문
                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1921
                                                                                                                                                                                                                                                                                                                             2281 TAGGTGAATATCCTTTTAAGAATGGATTGACTTTATTTTTGTCATCTTGTACAAGCAT 2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1921
                                                                         2461
                                                                                                               2461
                                                                                                                                                                                         2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                             2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1861 CAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTG 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1801 TAMAMACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTCTGGGATTTC 1860
                        ACTAACATCTGTGATTGCACATATACTAA 2549
                                                                         AAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGCTTGTAATGAGCGAT
                                                                                                         AAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGCTTGTAATGAGCGAT
                                                                                                                                                    CAAAAATAAATTCATCAGTTCTGAGAGCAAGATTTTGGAGGTTCAGCTTCTCCATGTAAT
                                                                                                                                                                          CAAAAATAAATTCATCAGTTCTGAGAGCAAGATTTTGGAGGTTCAGCTTCTCCATGTAAT 2460
                                                                                                                                                                                                                                                                                                                                                                                                      ACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTTAGCCTGTTCAGGAG 2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTGACAAGGATGTCGTGT 2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATITCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGG 2100
  ACTAACATCTGTGATTGCACATATACTAA 2549
                                                                                                                                                                                                                               CTTATTGCGGCATTCCGATGGATTATTGATTTTGGGGGGTTCCCACTTTCAAATGTGACAC
                                                                                                                                                                                                                                                                  CITATIGCGGCATICCGATGGATTATIGATTITGGGGGTTCCCACTITCAAATGTGACAC 2400
                                                                                                                                                                                                                                                                                                         TAGGTGAATATCCTTTTAAGAATGGATTGACTACTTTATTTTGTCATCTTGTACAAGCAT
                                                                                                                                                                                                                                                                                                                                                                                    ACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTTAGCCTGTTCAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTGACAAGGATGTCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TIGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAA 2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCGTCACTACAGATGATAAGGTAGCAGAGACTTTTTCTACGCAGAGTTGATAGTGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGATTGTA 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGATTGTA 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTG
                                                                                                               2520
                                                                                                                                                      2460
                                                                                                                                                                                                                                 2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2040
                                                                                                                                                                                                                                                                                                             2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1920
```

ABZ14061 standard; DNA; 2181 BP

ABZ14061;

21-JAN-2003 (first entry)

Arabidopsis thaliana stress regulated gene SEQ ID NO 1866

Arabidopsis thaliana; plant; gene; stress; transgenic; ds

Arabidopsis thaliana

WO200216655-A2.

28-FEB-2002.

24-AUG-2001; 2001WO-US026685.

RESULT 3
AB214601
ID AB21
XX AB21
XX AB21
XX AB21
XX Arab
24-AUG-2000; 2000US-0227866P. 26-JAN-2001; 2001US-0264647P.

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                  ঠ
                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                              닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 1489;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to identifying a stress condition to which a plant cell has been exposed, comprising: (a) contacting nucleic acid representative of expressed polynucleotides in the plant cell with an array or probes representative of the plant cell genome; and (b) detecting a profile of expressed polynucleotides in the plant cell characteristic of a stress response. The method is useful in the production of transgenic plants, cells and seeds and in producing plants with increased tolerance to abiotic stress. The present sequence is that of an Arabidopsis thaliana stress regulated gene (ABZ12196-ABZ17574) used in methods of the invention. Note: The sequence data for this pattent is not represented in the printed specification but is based on sequence information supplied to Derwent by the European Patent Office
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Identifying a stress condition to which a plant cell has been exposed and producing plants with increased tolerance to these abiotic stresses.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2181 BP; 624 A; 406 C; 555 G; 596 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 11; SEQ ID NO 1866; 577pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2002-304127/34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22-JUN-2001; 2001US-0300111P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (SCRI ) SCRIPPS RES INST.
                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                         459
                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 ATCTGTGAACAGCTTGCGGAGTTAAACTCAGATGGATTTGAGGTCATTTTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              159 GTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99 ATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAG
                          GCTCTTCTGTCGCTAGAGCTGAAAGCTGATCTTTTGATTCTTCTAAGTGATGTTGAGGGC
                                                                GGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGG 698
                                                                                                                                                         ACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCA
                                                                                                                                                                                                       GTCAAAGCGATGCTGAGGATGAGGGTTATTCCAGTTTTCAATGAGAATGATGCTATAAGC
                                                                                                                                                                                                                                                                                              ATGCTTGTGACCGATAGCAGTTTTAGAGATAAGGATTTCAGGAAGCAACTTAGTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGATTTACAGAAGCCACAAATGGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTGATCTGCAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTGCCGTTGGTCTTGGTCGACAAAGGCTTCGATACAGACAATTAGTCAACAGCAGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTGGGACTGCAGTTGTTACTGGGAAAGGTGGAAGATTGGCTCTTGGACGTTTAGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGACGGAGATCGTTCACGCGCGTTCGCCAAAGACGTTAAGCGTATCGTCGTCAAG
                                                                                                                ACTCGCAGAGCCCCCTACAAGGATTCTACTGGTATATTTTGGGATAATGACAGCTTAGCC
                                                                                                                                                                                                                                           GTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGC
                                                                                                                                                                                                                                                                                                                                         CTTCTTGTCACCGACAGTGATTTTGAGAACCCCAAAGTTCCGGGAGCAACTCACTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                    AGCAGTCTCATGGCTTACTATGAGACTATGTTTGACCAGTTGGGATGTGACGGTTGCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                             AGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kreps J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        43.0%;
69.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wang X,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1096; DB 6;
Pred. No. 2.5e-304;
0; Mismatches 655;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zhu T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 2181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                          600
                                                                                                                                                            638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          278
                                                                                                                540
                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                         518
                                                                                                                                                                                                                                                                                                                                                                                                                                  458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
S
                                             밁
                                                                                 S
                                                                                                                                    맑
                                                                                                                                                                        Ś
                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                699 TTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAA
    CTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATT 1838
                                                                                                                                                                                                                             AACTCGÁCGÁÁAATCCCAGTGCTAGGCCATGCTGÁTGGAÁTCTGTCATGTATATGTTGAT 1560
                                                                                                                                                                                                                                                                                                                                                                 GATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAG 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACATCTTGCCCATTAGGTGTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATCCAATAGGCCGTGTATTAAAGAAAACTCAGGTTGCAGATGATCTTATTTTAGAGAAG 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGC 1778
                                                                                                                                      AAGTCTGGTAAACTGGACATGGCAAAGCGCATTGTTTCCGATGCAAAGTTGGACTATCCA
                                                                                                                                                                                                                                                                   GCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCCACGTATATATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                          GGAGGTAAACTCATAGGACTTGTGACCTCAAGAGAGGAGATTCCTGATTTGCTCAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTCGTCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCGGAGACTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAA 1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGAAGCCTGGGAAGATCTCAAGCCTTGCAGCTTCCGTTCGCCAGCTAGCCGAAATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <u>АТААААССАGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACT 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTACACGACATTGCCAATGCCCTTGAAGTAAATGAGAAAACAATTAAAGCTGAGAATGAT 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAA 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCAAGATGCTCATTTATGGGCTCCGGTCGTAGATACTACTTCTCGTGACATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAACACCAGGACGAGATTACTTTTGGCGAAAAGTCCAAATTAGGACGAGGGGGGTATGACT
                                                GCAGCCTGTAATGCGATGGAAACCCTTCTTGTACATAAAGATTTGGAGCAGAATGGTTTT 1680
                                                                                                                                                                             AAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCA 1718
                                                                                                                                                                                                                                                                                                                   GATGACGTTATTGATCTTGTGATCCCAAGAGGCAGCAACAAGCTTGTTTCTCAAATAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTAGATGTTGCTGCAGCACAAGAAGCTGGATATGAAGAGTCTTTGGTAGCTCGCTTAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGCAAGGGAAAGCTCAAGAAAGCTTCAGGCCTTATCTTCAGAAGATAGGAAACAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAAAAGTTAAAGCTGCTGTTAATGCAGCTTATGGTGGCGTTCCTGTTATCATAACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGGTATCTTCGCTTGCAATCCGGAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGATATGCAGCTGAGAATATAAGTAAAGTCCTTAGAGGACTGCGTGTTGGTACCCTGTTC
```

1298

1080

1058 900 998 938

780 878

840

720 818 660

1538

1380

1440

1658 1500 1478

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뭕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Delta-pyrroline-5-carboxylate synthetase; P5CS; proline; crop; biosynthesis; metabolism; sodium chloride; salt; NaCl; drought; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Delta-pyrroline-5-carboxylate synthetase (PSCS) coding sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-APR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAQ68841 standard; cDNA; 2417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Vigna aconitifolia.
Delta-pyyroline-5-carboxylate synthetase (PSCS), catalyses the first two
                                                                             cDNA clone encoding bifunctional enzyme for proline prodn ~ useful
prepare transgenic drought resistant plants.
                                                                                                                                                                                                                                                                                                                                                                                                       US5344923-A
                                      Claim 1; Fig 1; 17pp; English.
                                                                                                                                           WPI; 1994-285533/35.
P-PSDB; AAR61135.
                                                                                                                                                                                                                                                                                 29-SEP-1992;
                                                                                                                                                                                                                                                                                                                        29-SEP-1992;
                                                                                                                                                                                                                                                                                                                                                                   06-SEP-1994
                                                                                                                                                                                                   Delauney AJ, Verma DPS,
                                                                                                                                                                                                                                          (OHIS ) UNIV OHIO STATE RES FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1839 GCGCACAAAGCTCTGGGATTTCCAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCGATGATCTTATTATGTTCTGCAAACCAAAGCCGTCACTTTGTATGGTGGGCCAAGA 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGGAGACAATGGAATCGTTTACACCCATAAGGATCTTCCTGT 2144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTT 2242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTGGAGTTGAAGGATTATTGACAACAAGATGGATAATGAGAGGAAAGGGACAAGTTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTG 2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGTTCGGACTTGGTGCTGAGGTGGGAATAAGCACAAGCAGGATTCATGCCCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCA 2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCCAAGTGGACAGTGCTGTTTTTCCACAATGCAAGCACAAGATTCTCTGATGGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ĠĠĀĀĠŦĠĊĄĊĀĊĀĊŦĠĀŦŦĠĊĀŦAĠŦĠĀĊĠĠĀĀĠĀŦĀĠŦĠĀĀĠĊĀĠĀĀĀTĀŦŦĊĊŦĊ 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTGCACCGTTGAAATTGTAGAAGACGTATATGGTGCTATAGATCATATTCACCAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTAT 1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAAGTGCAAAACTGAATATTCCGGAAACAAAATCATTTCACCACGAGTACAGTTCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                   92US-00953695.
                                                                                                                                                                                                                                                                                                                          92US-00953695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37. .2052
                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= a
/product= "Delta-pyyroline-5-carboxylate synthetase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                     Hu CA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   និនិនិនិន្និនិ
                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
    Ş
                                             밁
                                                                               Ś
                                                                                                                        밁
                                                                                                                                                             δ
                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                                   跊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 1519; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         steps in proline production in plants. By introduction into a plant of a P5CS cDNA clone, over production of proline is incurred resulting in increased sodium chloride tolerance and drought resistance. The method may be used to enhance crop performance under conditions of salt and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2417 BP; 695 A; 445 C; 582 G; 695 T; 0 U; 0 Other;
    1008 GATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGG-AACGAAAAAAGATATTGCTAGA 1066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 348 CAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTG 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             108 GTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCCGCGTCATCATCAAGGTGGGCACT 167
                                                                                                                                                                                                                                                                                                                                                                     649
                                                                                                                                                                                                                                                                                                                                                                                                                                                  589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                648 GCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGT 707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             469 CTGTTGGCGCTGAAGGTTATTCCGGTGTTCAATGAGAACGATGCCGTTAGTACCAGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             409 ACGGATAACGATTTTCGAGATAAGGATTTCAGGAAGCAGCTTACTGAGACTGTGAAGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 468 ACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAAACTGTTGAGTCA 527
                                                                                                                                                    888 AATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTTGGTACTCTCTTTCACAAGAAT 947
                                                                                                                                                                                                     769
                                                                                                                                                                                                                                              828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      588 GCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    528 TTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAG
                                                                                 948 GCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGA 1007
                                                                                                                          829 CCTGAGAATATCATTAATGTTCTCCAAGGACAACGTATAGGAACTCTCTTCCATAAAGAT
                                                                                                                                                                                                                                                                                     709 AATGAAATTACTTTTGGCGACAAGTCTAGAGTGGGAAGAGGCGGAATGACTGCCAAAGTA 768
                                                                                                                                                                                                                                                                                                                          768 CAAGAAATCACTTTTGGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      49
                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCTTGGAGTTAAAAGCCGATCTCCTTGTTTTGTTGAGTGATGTAGAAGGTCTTTACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGGCTCTTTACGATATGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTATTGGACGCCAAAGGCTACGTTTCCGTAAATTAATCAACAGCAGCTTCGCCGACCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGATTAAGCAACTCAACTCTCTCGGATACGACATTATACTCGTCTCCTCTGGCCCCCGTC 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGGATCCTTCTCGGGGGTTCATGAAGGÁCGTGAAGCGTGTGATCATCAAAGTTGGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGAAACCCCAACTCGAACTCGACGGCAAGGCCTGCGCCGCTTGGACAGAACAGTCTC 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAGTGGGGCGACAGCGTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTG 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGGTGGTCACTCGCGAAGAAGGAAGGTTAGCGGTTGGAAGATTGGGAGCTCTGTGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                         GGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAAAAGCATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTCCCTATGAGGATTCTTCTGGTATATTTTGGGATAATGATAGTTTATCTGCTTTATTA 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGGCTCTACGATACGCTGTTCACTCAGCTCGATGTGACATCGGCTCAGCTTCTTGTG
                                             GCACATGAGTGGGCTCAAGTAAAAGAGGTTGATGCACGTGAGATGGCTGTTGCAGC-AGG
                                                                                                                                                                                                        AAAGCTGCGGTTCATGCAGCTGAAGCTGGCATTCCTGTTGTTATTACCAGTGGTTTTTGCA
                                                                                                                                                                                                                                              AAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAA
                                                                                                                                                                                                                                                                                                                                                                   GGCCCTCCAAGTGACCCTCATTCAAAGCTTATTTATACATATAACAAAGAAAAAACATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42.9%; Score 1092.8; DB 2; Length 70.9%; Pred. No. 2.2e-303; tive 0; Mismatches 617; Indels
```

947

888

828 887 827

648

767

708

647

587 468

528

408 467 287

168 227

```
1487
2086 GATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTG 2145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1008 AATAGCTGATGCCCTGGAAGCAAATGAAAAAATAATCAGGATTGAAAATGAAGCTGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATTGATCTGGTAATTCCAAGAGGCAGTAACAAACTTGTTTCTCAGATCAAGAGTTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAACCAGATACTTAAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTG 1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTAT 1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACTGCTGCACAAGAAGCAGGATATGAAAAATCCTTGGTGGCTAGGCTAGCTTTAAAAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGT
                                                                                                 AGACAGTGCTGCTTTTTCACAATGCAAGCACCAGATTCAGTGATGGGGGCACGATTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTGTTAAATATTCCACAAGCACATTCATTTCATCATGAGTACAGTTCGCTGGCTTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAA 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGA 1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAAAATTCCTGTTTTAGGTCATGCTGATGGAATTTGCCATGTCTATGTTGATAAGTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAAC 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCAAATGCAATTTTGCACAAAGTAATTATCGAGGCCATACCAGATAATGTTGGTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCATTGGCAATCCGAAGTGGGAATGGGCTTCTCTTGAAAGGTGGCAAAGAAGCTAAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGC 1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGGAAGATTGCAAGTCTTGCAAACAACATGCGAATCATTGCCAATATGGAAGATCCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACATACTGATTCGÁTCGTTGCTGAAGATAACGAAGTAGCTAÁTGTGTTTCTACGCCAAGT
                                                                                                                                                                                                                                                                                         TCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAACGTGGAGATGGCAAAGCGGATTGTATTAGATGCAAAAGTTGATTATCCGGCAGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACTTATAGGACTTGTGACCTCAAGGGAAGAGATCCCTGAGCTACTTAAGTTGGATGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCTTTGGGAGTGCTCCTTATTGTTTTTGAGTCACGTCCTGATGCTCTTGTACAGATAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGTCGAGTATTAAAACGTACCGAGCTTTCAGATGGGCTAATTTTAGAAAAGACATCATC
                                                                                                                                            TGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGGCTCGTTTTG-
                                                                                                                                                                                                                                                                                                                                                                                                          TGTTGAGTTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAATGCCATGGAAACACTTCTTATCCACAAGGATTTGATAGAGAAAGGTTGGCTTAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCTCTGGGATTTCCAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATGGCCTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1126
                                                                                                    2027
                                                                                                                                                                                                                                1967
                                                                                                                                                                                                                                                                                         2026
                                                                                                                                                                                                                                                                                                                                                                                                                 1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1186
                                                                                                                                                                                                                                                                                                                                                        1907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1127
                                                                                                                                                                2085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1906
```

Ś 뫄 Ś 밁 8 片 Ś 밁 δ 멍 δ 밁 Ś 밁 Š 밁 Ś В δ 밁 Ś g Ś B S 맑 Ś 밁 S 밁 S 뮍 ŀδ 밁 Ś

Sequence 2417 BP; 695 A; 445 C; 582 G; 695 T; 0 U; 0 Other;

```
RESULT 5
AAT77279
ID AAT777279
AC AAT77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ᅜ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                        This sequence is the insert from cDNA clone pVAB2 which encodes the bifunctional enzyme deltal-pyrroline-5-carboxylate synthetase (P5CS). The P5CS enzyme catalyses both gamma-glutamyl phosphate and glutamic- gamma-semialdehyde production. Transgenic plants transformed with this cDNA overproduce proline. New roots are better protected under salt stress conditions by proline accumulation, and are an important component for overall plant adaptation to cope with drought induced stress. Such plants thus show improved salt tolerance and resistance to drought. The plants can also be engineered to express a glutamine synthetase gene to increase the amount of glutamine available as a substrate for the P5CS. (Updated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       glutamyl semialdehyde dehydrogenase; proline biosynthesis; glutamine availability; sodium chloride tolerance; salt tolerance; drought resistance; transgenic plant; mothbean; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-JUN-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US5639950-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Vigna aconitifolia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Deltal-pyrroline-5-carboxylate synthetase cDNA from mothbean
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25-MAR-2003
26-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAT77279;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAT77279
                                                                    on 25-MAR-2003 to correct PF field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 3; Fig 1; 19pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Inducing sodium chloride tolerance and drought resistance in plants - using the Vigna aconitifolia delta-pyrroline-5-carboxylate synthetase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17-JUN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P5CS; clone pVAB2; bifunctional enzyme; glutamyl kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (OHIS ) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2028 GACTAGGCGCAGAGGTTGGAATTAGTACAAGCAGGATTCATGCTCGAGGTCAGTAGG--A 2085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1997-332099/30.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ł
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATAGAGGCGTTGTCTACACCCACAAAGACCTTGCAATTTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAAT 2247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTG 2205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTGAGGATTGTTAACAACAAGATGGATACTAAAAGGAAG-GGACAAGTGGTAGATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (revised)
(first en
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               OHIO STATE RES FOUND.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Verma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   92US-00953695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94US-00267259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "*tag= a "deltal-pyrroline-5-carboxylate synthetase"
/product= "deltal-pyrroline-5-carboxylate synthetase"
/note= "Encodes a bifunctional enzyme with both glutamyl kinase and glutamyl semialdehyde dehydrogenase activities"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers 37. .2052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DPS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hu CA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2144
```

, Qy Db	, 8d ;	g Sy	dg V	B &	9D 82	dg VQ	dd Vy	A AG	A 44	D Q	d S	Qy db	B 8	S S	Db	ρ જ	B &	Query Best I Matche
1008 AATAGCTGATGCCCTGGAAGCAAATGAAAAATAATCAGGATTGAAAATGAAGCTGATGT 1067 1127 AGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACC 1186	67 TGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGT 112	1008 GATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGG-AACGAAAAAAGATATTGCTAGA 1066 	948 GCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGA 1007	888 AATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACAAGAAT 947	828 AAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAA 887	768 CAAGAAATCACTTTTGGAGACAAATCTCGTGTAGGTAGGAGGGCGTAGACAGCAAAAGTG 827 	708 GGTCCACCAAGTGÄACCATCATCAAAAATCATACACACTTATATATAAAGAAAAGCATCAG 767	648 GCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGT 707	588 GCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTG 647	528 TANTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAG 587	468 ACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCA 527	408 ATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTC 467	348 CAAAAGCCACAGATGAATGAATGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTG 407	288 GGAGTGGGGCGACAGCGAACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTG 347	228 CAGGITAAGGAACTGAACTCTITAGGATACGAAGIGATTTIGGTCACCTCAGGIGCTGTT 287	168 GCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAG 227	108 GTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGGCGCGTCATCATCAAGGTGGGCACT 167	Y Match 42.9%; Score 1092.8; DB 2; Length 2417; t Local Similarity 70.9%; Pred. No. 2.2e-303; Ches 1519; Conservative 0; Mismatches 617; Indels 6; Gaps 5;
Ş	D	B 8	B 8	9 4 5	9 dg Q	, B (S B &	S B &	P 5	5 8 6	S B &	S B 2	₹ B \$	₹ ₽ \$	· 8 B :	S B	& 유 :	Qν Db
2206 ACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAAT 2247	2146 TTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTG 2205	2086 GATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTG 2145	TIGATAGTIGUTIGUTIGUATTUCALAATIGUAAGATTUCALGATIGUTUGATTUGA AGACAGTGCTGCTGTTTTTCACAATGCAAGCACCAGATTCAGTGATGGGGCACGATTTGA	967 TCATACAGATTGTATCGTCACTACAGATCATAAGGTAGCAGACTTTTCTACGCAGAGGTAGCAGACTAGAGACTTTTCTACGCCAAGTAGATAAGATAACGAAGACTAATGTGTTTCTACGCCCAAGTAGCATACTGAAGATCAATGTGTTTCTACGCCAAGTAGCAAGTAACGAAGTAACGAAGTAAGT	O7 TGTTGAGTTTGTTGATGATGTTCAAICAGCAATTGACCATTCACCTCCCTTATGGAAGTGCCACCTTATGGAAGTGCCACCTTATGGAAGTGCCACCTTATGGAAGTGCCACCTTATGGAAGTGCACCTTATGGAAGTGCACCTTATGGAAGTGCACCTTATGGAAGTGCACCTTATGGAAGTGCACCTTTGATGGAAGTGCACCTTTGATGGAAGTGCACCTTTGATGGAAGTGCACCTTTGATGGAAGTGCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCTTTGATGGAAGTGCACCACCACCACCACCACCACCACCACCACCACCACCAC	88 TCTGTTAAATATTCCACAAGCACATTCATTCATCATGAGTACAGTTCGCTGGCTTGCAC	CONTROL TO THE CONTRO	CALIFORNIA CONCINCIO INCIDENTA CON CONTROL CON	OB TARCCARATGCARAGECCARAGECCAGATGCATARGARGATGCARAGETCARAGATCCTTGACGCAGACCTG	TAMATICULETTI SOCCETE SULES SU	SATTGATCTGGTAATTCCAAGAGGCAGTAACAAACTTGTTTCTCAGATCAAGAGATCAAGG	7 CATTGATCTTGTCACGTCAAGAGGAAGTAATAAGCTTGTCTCAAATCAAGGGGTCAAG		08 TTCATATCGCATATTGCATATAGCTTATAACGTGCTATTCTCTTGATAGGTGGCAAAGAAGCTAAGCG		88 TGGTCGAGTATTAAAACGTACCGAGCTTTCAGATGGGCTAATTTTAGAAAAGACATCATC		

458

420 518

```
RESULT 6
ABZ113586
ID 213586
ID 213586
ID 2137
XX ABZ1
XX ABZ1
XX AFAB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
밁
                                    Ś
                                                                                                      밁
                                                                                                                                                      Ś
                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to identifying a stress condition to which a plant cell has been exposed, comprising: (a) contacting nucleic acid representative of expressed polynucleotides in the plant cell with an array or probes representative of the plant cell genome; and (b) detecting a profile of expressed polynucleotides in the plant cell characteristic of a stress response. The method is useful in the production of transgenic plants, cells and seeds and in producing plants with increased tolerance to abiotic stress. The present sequence is that of an Arabidopsis thaliana stress regulated gene (ABZ1216-ABZ17574) used in methods of the invention. Note: The sequence data for this pattent is not represented in the printed specification but is based on sequence information supplied to Derwent by the European Patent Office
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Identifying a stress condition to which a plant cell has been exposed and producing plants with increased tolerance to these abiotic stresses.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 15; SEQ ID NO 1391; 577pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arabidopsis thaliana stress regulated gene SEQ ID NO 1391.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           21-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABZ13586;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABZ13586 standard; DNA; 2154 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2002-304127/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-AUG-2000; 2000US-0227866P.
26-JAN-2001; 2001US-0264647P.
22-JUN-2001; 2001US-0300111P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis thaliana; plant; gene; stress; transgenic; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2154 BP; 595 A; 412 C; 562 G; 585 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24-AUG-2001; 2001WO-US026685.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                28-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200216655-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                            Local Sin
hes 1484;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2145 ATAGAGGCGTTGTCTACACCCACAAAGACCTTGCAATTTAAT 2186
  181
                                                   279
                                                                                                         121
                                                                                                                                                                                                                                                                  159
                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SCRIPPS RES INST.
SYNGENTA PARTICIPATIONS AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                               GTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCT
                                                                                                                                                                                                               GTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTTGGTCGTTTTAGGAGCA
                                                                                                                                                                                                                                                                                                                      ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG
  GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT
                                                                                                                                                      CTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCA
                                             ATGGCGAGCGTCGACCCGTCCGGGAGCTTCGTGAGGGAACGTGAAGCGCGTCATCATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kreps J,
                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                   42.6%; Score 1085.6; DB 6; Length 2154; 69.1%; Pred. No. 2.5e-301;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wang X,
                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                            Pred. No. 2.5e-301;
0; Mismatches 664;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zhu T;
                                                                                                                                                                                                                                                                                                                                                                                                                               664; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                               278
     240
                                                                                                            180
                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                  218
                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                              158
                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                               片
                                                                 5
                                                                                                                                     밁
                                                                                                                                                                                      S
                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1059
                                                                                                                                                                                                                                              1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       339 GCTGATCTGCAAAAAGCCACAGATGGAGTTAGATGGAAAAGGCTTGTGGCTGTTGGTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA
                                  ĊĀĠĀŢĀĠĊŢŢĊĄĊŢŢĠĊĊĀŢĊĊĠŢĀĠŢĠĠĀĀĀŢĠĠŢĊŢŢĊŢĠĊŢĠĀĀĠĠĠŢĠĢĀĀĀĠĠĀĠ 1320
                                                                       TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAA 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTTGGTACTCTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCAAGTCTATGCTTGATTTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAA
                                                                                                                                                                                        ACATOTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTT 1358
                                                                                                                                                                                                                                              GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG
                                                                                                                                                                                                                                                                                            GACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAA 1298
                                                                                                                                                                                                                                                                                                                                                                                                     АГАЛАЛССАВВАЛАВАТАВСАЛАВССТІВСАЛАЛІСТАТІСВТАСССТІВСАЛАТАТВВАЛА 1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTTGTCATCAGAGGAACGAAAAAAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             actagaaaggctccatatgaggattcatctggtatattctgggataatgacagtttagca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT
                                                                                                                                     ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTA 1260
```

1080

1178

1140

960 1058 998

900

938

840

878 720

780

818 660 758 600 698 540

Ş 밁

뭐 S

Ş

```
RESULT 7
AAC42463
ID AAC4
XX AAC4
XX AAC4
XX AAC4
XX AAC4
XX AAC4
XX 17-C
XX Arab
XX Prot
KW Prot
XX Prot
XX Arab
XX Arab
XX Arab
                                                      Hybridisation assay; genetic mapping; gene expression control; protein identification; signal transduction pathway; metabolic pathway;
                                                                                                Arabidopsis thaliana DNA fragment SEQ ID NO: 35654.
                                                                                                                             17-OCT-2000
                                                                                                                                                                                    AAC42463 standard; DNA; 2273
               Arabidopsis thaliana.
                                          promoter; termination sequence; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1321
                                                                                                                                                                                                                                                           2101
                                                                                                                                                                                                                                                                                                                                            2139
                                                                                                                                                                                                                                                                                                                                                                         1981
                                                                                                                                                                                                                                                                                                                                                                                                                                1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                           2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTT
                                                                                                                                                                                                                                                           GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCCATCCAA 2148
                                                                                                                                                                                                                                                                                    AATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAA 2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCTGCACTGTTGAGTTTGATGATGATGTTCAATCAGCAATTGACCATATTCATCGTTAT 1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGC 1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATACTÁCAÁÁAATCCCTGTGCTAGGTCÁTGCTGATGGAATCTGTCATGTATÁTGTCGAC 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCGTCAACTAAGATTCCTTGTTCTTTGGGCATGCTGATGGTATATGCCACGTATATATTGAC 1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAA 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAG 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAGAGATTCCTGATTTGCTTAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT 1380
                                                                                                                                                                                                                                                                                                                                         GTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTG 2198
                                                                                                                                                                                                                                                                                                                                                                                          CGTTTTGGATTGGGTGGTGAGGTTGGCATAAGCACAGGGGGTATCCATGCCCGTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                CGCCAAGTGGATAGCGCTGTGTTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTA 2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ĠĊAAGTĀĠGATĀĊŢĠAACAŢĀĊĊĀĠĀĀĠĊACGGŢĊĀŢŢCĀĀCĊĀŢĠĀĠŢĀCŢĠŢĠĊĊĀĀĠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTT
                                                                                                                                                                                                                                                                                                                GTCGGGGTCGAAGGATTACTTÁCAACGAGÁTGGATAATGAGAGGAAAAAGGACAAGTTGTC
                                                                                                                                                                                                                                                                                                                                                                        CGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGGCT 2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGAGTGCACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATT 1838
                                                                                                                          (first entry)
                                                                                                                                                                                    뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        . 1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1478
                                                                                                                                                                                                                                                                                                                                                                         2040
                                                                                                                                                                                                                                                                                                                                                                                                    2138
   25-FEB-2000; 2000EP-00301439.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EP1033405-A2
                                                                                                                                                                                                                                                                                                                                16-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       16-APR-1999
                                                                                                                                                                                                                                             18-JUN-1999
99US-0137502P

99US-0138540P

99US-0138540P

99US-0139452P

99US-0139452P

99US-0139454P

99US-0139456P

99US-0139456P

99US-0139456P

99US-0139456P

99US-0139458P

99US-0139460P

99US-0139460P

99US-0139462P

99US-0139463P

99US-0139763P

99US-0139763P

99US-0140353P

99US-0140853P

                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0132485p
99US-0132486p
99US-0132486p
99US-0132863p
99US-0134218p
99US-0134211p
99US-0134211p
99US-0134370p
99US-01343768p
99US-013532p
99US-013532p
99US-013532p
99US-0136392p
99US-0136392p
99US-0136392p
99US-0136392p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0130510P.
99US-0130891P.
99US-0131449P.
99US-0132048P.
99US-0132407P.
99US-0132484P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99US-0125768P.
99US-0126264P.
99US-0126785P.
99US-0127462P.
99US-0128234P.
99US-012874P.
99US-012877P.
99US-0130449P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0121825P.
99US-0123180P.
99US-0123548P.
```

Ś 밁

吊 S g B Ś

S

Ś 망

멍

멼 Ś

Ś

Ş

밁 Ş 문

멼

Ś B

```
99US-0142154P

99US-0142803P

99US-0142803P

99US-0142803P

99US-0143542P

99US-014363P

99US-0144085P

99US-0144085P

99US-0144331P

99US-0144331P

99US-0144333P

99US-0145086P

99US-0145088P

99US-0145089P

99US-0145089P

99US-0145089P

99US-0145089P

99US-0145089P

99US-0145089P

99US-0145089P

99US-0145192P

99US-0145192P

99US-0145218P

99US-0147303P

99US-0147303P

99US-0147303P

99US-0147303P

99US-0147303P

99US-0147303P

99US-014972P

99US-014972P

99US-0149739P

99US-0149739P

99US-0149739P

99US-0149739P

99US-0149739P

99US-0149739P

99US-0151066P

99US-0151068P

                         S
                                                      맑
                                                                      8 B
                                                                                                                  Ş
                                                                                                                                            밁
                                                                                                                                                            S
                                                                                                                                                                                       밁
                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                               먉
                                                                                                                                                                                                                                                                                                  $
                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 1484; Conser
                                                                                                                                                                                                                                                                                                                                                                      22-SEP 1999
23-SEP 1999
24-SEP 1999
24-SEP 1999
29-SEP 1999
06-OCT 1999
07-OCT 1999
113-OCT 1999
114-OCT 1999
121-OCT 1999
121-OCT 1999
121-OCT 1999
221-OCT 1999
                                                                                                                       339
              480
                                459
                                                      420
                                                                            399
                                                                                                 360
                                                                                                                                              300
                                                                                                                                                                   279
                                                                                                                                                                                        240
                                                                                                                                                                                                              219
                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                         159
                                                                                                                                                                                                                                                                               120
                                                                                                                                                                                                                                                                                                      99
                                                                                                 GCTGATCTGCAAAAGCCACAGATGGAAGGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAG
                                                                                                                                                                                                                                  CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT
                            CTTCTTGTCACCGACAGTGATTTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACT
                                                      ĠĠŦĠĊĠĠŦŦĠĠŦĊŦŦĠĠĊAĠĠĊĀĀĀĠĠĊŦŦĊĠŦŤĀŦĊĠĀĊĀĀŦĀĠŦĊĀĀŦĀĠĊĀĠĊŦŦŦ
                                                                                                                                                          GGTGCTGTTGGAGTGGGGCGACAGCGACCTTAGGTACCGGAAGCTTGTCAATAGCAGCTTT
                                                                                                                                                                                         CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT
                                                                                                                                                                                                           CTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCA
                                                                                                                                                                                                                                                                               ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG
                                                                                                                                                                                                                                                                                             ATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAG
                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                      99US-0155659P

99US-015659R

99US-0157117P

99US-01578659P

99US-01578659P

99US-0158029P

99US-0158029P

99US-0158029P

99US-0159293P

99US-0159293P

99US-0159331P

99US-0159331P

99US-0159637P

99US-0159637P

99US-0160741P

99US-0160741P

99US-0160770P

99US-0160770P

99US-0160768P

99US-0160788P

99US-0160815P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S-0154779P.
S-0155139P.
S-0155486P.
S-0155659P.
                                                                                                                                                                                                                                                                                                                                    42.6%;
                                                                                                                                                                                                                                                                                                                           ,
,
                                                                                                                                                                                                                                                                                                                         Score 1085.6; DB 3;
Pred. No. 2.6e-301;
0; Mismatches 664;
                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                Length
                                                                                                                                                                                                                                                                                                                                                  2273;
                                                                                                                                                                                                                                                                                                                           <u>.</u>.
                                                                                                                                                                                                                                                                                                                          Gaps
                                                         479
                                                                             458
                                                                                                  419
                                                                                                                        398
                                                                                                                                                                   338
                                                                                                                                                                                                               278
                                                                                                                                                                                                                                                          218
                                                                                                                                                                                                                                                                                179
                                                                                                                                                                                                                                                                                                       158
                                                                                                                                              359
                                                                                                                                                                                         299
                                                                                                                                                                                                                                    239
                                                                                                                                                                                                                                                                                                                           0
```

01-JUL-1999
06-JUL-1999
06-JUL-1999
08-JUL-1999
11-JUL-1999
11-JUL-1999
11-JUL-1999
11-JUL-1999
11-JUL-1999
11-JUL-1999
11-JUL-1999
11-JUL-1999
11-JUL-1999
12-JUL-1999
13-JUL-1999
13-JUL-1999
11-JUL-1999
11-JUL

밁

Ś

```
1020
1599 GCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGAC 1658
                                                                                                                                                                                                                                                                                                                                                           1440 GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT 1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1359 CAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAA 1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1299 ACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTT 1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1260 GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG 1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1119
                                                                                                                                         1539 GATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAG 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      639
                                                                                                                                                                                                                                                                                      GGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTT 1538
                                                                                                                                                                                                                                                                                                                                                                                                                    GCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTT 1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAA 1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAA 1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACT 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG 1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAA 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATT 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATA 1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTT 998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGT 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGGAGAGGGGGTATGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAA 758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTGAGCGATGTTGAAGGT 719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGACTGTTGGCACTGGAAACTGAAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGG 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCA 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTCAATGAGAATGATGCTATTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTGAGTCATTATAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGC 578
                                                                    GATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAA 1619
                                                                                                                                                                                                              ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTTGAATCCCGACCTGATGCACTTGTA 1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG 1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        599
```

Ś 밁

밁 Ş 밁

S

08-JUN-2001; 2001JP-00174553 24-DEC-2001; 2001GB-00030946. Ś Ď, Ś 밁 Ś 밁 Ş 밁 Ş 밁 S

닭

Ś

맑 Ş 밁 Ś

Ś 밁 Ś 밁 Ş 밁 Ś 밁 S

밁

Ś 밁

```
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
17-JUN-2003
                                                                                          ABX93778 standard; cDNA; 2571 BP
                                                                                                                                                                                                                                                                                                                                                                                 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1800
                                                                                                                                                                                                                                               2199 AATGGTGAÇAAGGATGTCGTGTAÇAÇÇÇATAAGAGTCTTÇCTTTGCAA 2246
                                                                                                                                                                                                                                                                                            2160 GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTC 2219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2019 CGCAGAGITGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCT 2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1980 GGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT 2039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1920 GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT 1979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1899 GCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTAT 1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1680 AAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA 1739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1620 AATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC
                                                                                                                                                                                                    2220 GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAA 2267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1659 AAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCA 1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTA 2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG 1799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGC 1778
                                                                                                                                                                                                                                                                                                                                                                                                                            CGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCA
                                                                                                                                                                                                                                                                                                                                    GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATT 1838
                                                                                                                                                                                                                                                                                                                                                                                 CGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC
  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                      2159
                                                                                                                                                                                                                                                                                                                                                                                                                                 2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1679
```

```
Grass; delta^1-pyrroline-5-carboxylate synthetase; P5CS; gene; ss; proline dehydrogenase; ProDH; stress tolerance; water tolerance; ca salt stress; salinity tolerance; temperature tolerance; protoplast; proline accumulation; thale cress.
                                                                                                                                                                                                  Thale cress delta^1-pyrroline-5-carboxylate synthetase (PSCS) cDNA
                                                             GB2376236-A
                                                                                                                               Arabidopsis thaliana.
                                                                               /product= "Thale cress P5CS"
                                                                                                  Location/Qualifiers
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                          δ
                                                                                                                                                                                                                          Ŗ
                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                        ğ
                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                            뮍
                                                                                                 ई
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 1484; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates to a grass plant in which a delta^1-pyrroline-5-carboxylate synthetase (P5CS) gene of rice, or a P5CS gene of Arabidopsis thaliana and the antisense gene of a prolline dehydrogenase (ProDH) gene of Arabidopsis thaliana, have been introduced in tandemly connected relation to each other. A new method of the present invention is useful for the production of a transgenic rice plant with improved stress tolerance, especially for water or salt stress and low temperatures. The invention provides for transgenic plants with a higher level of proline accumulating ability. The invention also relates to a grass plant obtained by introducing a vector comprising a gene of the invention into a calli or protoplast derived from a grass plant, growing the calli or protoplast derived from a grass plant a grawing the calli or colony. This sequence represents DNA encoding the thale cress
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2571 BP; 698 A; 493 C; 638 G; 742 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 2; Page 29-36; 52pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P-PSDB; ABU09030.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yoshiba Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (INDE-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (HITA )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      more improved salinity-tolerance, drought-tolerance and low temperature-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New grass plant overexpressing a P5CS gene from rice, useful for making transgenic plants with higher levels of proline accumulating ability, a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        transgenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2003-203644/20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polypeptide of the invention
                                                                                                                                                                                                                                                                                                            347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   159
                         579
                                                                                                       519
                                                                                                                                                                                     459
                                                                                                                                                                                                                              407
                                                                                                                                                                                                                                                                       399
                                                                                                                                                                                                                                                                                                                                                     339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HITACHI LTD.
BIO-ORIENTED TECHNOLOGY RES ADVANCEMENT.
INDEPENDENT ADMINISTRATIVE INST NAT INST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RIKEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTGGGACAGCAGTTGTTACTGGAAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAG 158
ACTAGAAAGGCTCCATATGAGGATTCATCTGGGTATATTTCTGGGATAATGACAGTTTAGCA 638
                                                                GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGC
                                                                                                                                                                                   сттсттетслесерасаетелеттелелелассельнегосераесластельност
                                                                                                                                                                                                                              AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA
                                                                                                                                                                                                                                                                     AGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAA
                                                                                                                                                                                                                                                                                                                 ĠĊĠĠĄŢĊŢŢĊĄĠĄĄĠĊŢĊĄĠĄĊŢĠĄĄĊŢŢĠĄŢĠĠĠĄĄĠĠĊŢŢĠŢĠĊŢĠĠŢĠŢŢĠĠĄĊĄĄ 406
                                                                                                                                                                                                                                                                                                                                             GCTGATCTGCAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAG
                                                                                                                                                                                                                                                                                                                                                                                            GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCA 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCT 218
                                                                                                       GTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGC
                                                                                                                                                CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Shinozaki K;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            42.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 1085.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ed. No. 2.8e
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6; DB 7; Length 2571;
.8e-301;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            664;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          o
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                       458
                                                                                                                                                                                                                                                                                                                                                                                              346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                          518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              286
                                                                     586
                                                                                                                                                     526
                                                                                                                                                                                                                                   466
                                                                                                                                                                                                                                                                                                                                                       398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                    밁
                                                                                                                           Ś
                                                                                                                                                                      밁
                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                몽
                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1059 TTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAA 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            587 ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT 646
                                             AAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCA 1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGT 706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGG 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAA 1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTT 1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTAGTTCTTGAGAAA 1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  АПАЛАДССАОСЛАЛАСАТАССАЛАСССТТССАЛЛАТСТАТТССТАСССТТССАЛАТАТССАЛ 1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATA 1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAA
            AAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA
                                                                                          AATACTÁCAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC
                                                                                                                      GCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGAC
                                                                                                                                                                      GATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAA 1606
                                                                                                                                                                                                               GATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAG
                                                                                                                                                                                                                                                      GGGGGTAÀACTCATTGGACTTGTGÀCTTCAÀGAGAAGAGATTCCTGATTTGCTTAAGCTT
                                                                                                                                                                                                                                                                                             GGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTT
                                                                                                                                                                                                                                                                                                                                    GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT
                                                                                                                                                                                                                                                                                                                                                                         GCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTT 1478
                                                                                                                                                                                                                                                                                                                                                                                                                    CAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTA 1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         878
                   1726
                                                                                                                                      1658
                                                                                                                                                                                                                                                                                                                                                                                                                           1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         758
                                                                                                                                                                                                                                                          1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    946
                                                                                                                                                                                                                                                                                                    1538
```

```
RAESULT 9
AAC44944
IID AAC44944
AXX AAC4
AXX AAC4
XX A
25-PEB-1999

05-MAR-1999

09-MAR-1999

23-MAR-1999

25-MAR-1999

29-MAR-1999

01-APR-1999

06-APR-1999

16-APR-1999

16-APR-1999

19-APR-1999

21-APR-1999

21-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                          Hybridisation assay; genetic mapping; gene expression control; protein identification; signal transduction pathway; metabolic pathway; promoter; termination sequence; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAC44944 standard; DNA; 1343 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thaliana DNA fragment SEQ ID NO: 44716.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18-OCT-2000 (first entry)
                                                                                                                                                                                                                                                                                                    06-SEP-2000
                                                                                                                                                                                                                                                                                                                                      EP1033405-A2.
                                                                                                                                                                                                                                                              25-FEB-2000; 2000EP-00301439
                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thaliana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTAT 1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGCACAAAGCTCTGGGATTTCCAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATG 1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGC 1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTTATGGTGGACCTATT 1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG 1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCCATCCAA 2254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATGGTGACAAGGATGTCGTGTACACCCCATAAGAGTCTTCCTTTGCAA 2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ĠŢĊĠĠĠĠŢĊĠĂĀĠĠAŢŢĀĊŦŦĀĊĀĀĊĠĀĠĀŦĠĠĀŢĀĀŤĠĀĠĀĠĀĀĀĠĠĀĊĀĀĠŤŢĠŤĊ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGTTTTGGATTGGGTGGGTGGGCATAAGCACAGGGTATCCATGCCCGTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGCCAAGTGGATAGCGCTGCTGTTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC 2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT
99US-0123160P
99US-0123548P
99US-0125788P
99US-0126264P
99US-0127462P
99US-0127462P
99US-0128234P
99US-0128234P
99US-013047P
99US-013047P
99US-0130449P
                                                                                                                                                                                                                            99US-0121825P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2206
        06-MAY-1999;
06-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23-APR-1999;
28-APR-1999;
30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-APR-1999;
04-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-MAY-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .8-MAY-1999
    99US-0139461P

99US-0139463P

99US-0139760P

99US-0139769P

99US-0140354P

99US-0140659P

99US-0140659P

99US-0141287P

99US-0141287P

99US-0141287P

99US-0142059P

99US-0142059P

99US-0142059P

99US-0142059P

99US-0142059P

99US-0142059P

99US-0142039P

99US-014339P

99US-0144333P

99US-0144332P

99US-0144332P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          99US-0138094P
99US-0138540P
99US-0139119P
99US-0139452P
99US-0139452P
99US-0139454P
99US-0139454P
99US-0139454P
99US-0139454P
99US-0139456P
99US-0139450P
99US-0139450P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0137528P.
99US-0137502P.
99US-0137724P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 990S-0134218P
990S-0134221P
990S-0134370P
990S-0134768P
990S-013474P
990S-0135124P
990S-0135629P
990S-0136021P
990S-0136021P
990S-0136782P
990S-0136782P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0132486P.
99US-0132487P.
99US-0132863P.
99US-0134256P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0130891P.
99US-0131449P.
99US-0132048P.
```

밁

Ś

Ś

B Ś 밁 Ś 片 S 맑 Ś 밁 5

Ś

```
20-JUL-1999
21-JUL-1999
21-JUL-1999
22-JUL-1999
23-JUL-1999
23-JUL-1999
24-JUL-1999
25-JUL-1999
26-JUL-1999
27-JUL-1999
28-JUL-1999
28-JUL-1999
28-JUL-1999
29-JUL-1999
29-JUL-1999
20-JUL-1999
20-JUL
  S-0144884P.
S-0144814P.
S-0145086P.
S-0145088P.
S-0145085P.
S-0145087P.
  3-015659P

3-015659P

3-0157117P

3-0157179

3-015785P

3-0158232P

3-0158232P

3-0159293P

3-0159293P

3-0159293P

3-0159232P

3-0159332P

3-0159332P
                                                                                                                                                                     -0151080P
-0151080P
-0151080P
-0151080P
-015130P
-015130P
-0153070P
-0153070P
-0154039P
-0154739P
-0154439P
-01554886P
-01554886P
                                                                                                                                                                                                                                                                                                                                                     3-0149722P.
3-0149723P.
3-0149929P.
3-0149902P.
3-0149930P.
                                                                                                                                                                                                                                                                                                                                                                                                                       0147260p

0147416p

0147416p

0147493p

0148171p

0148171p

0148171p

0148341p

0148664p

0148664p

0148664p

0149175p
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0145192P.
0145145P.
0145218P.
                  δ
                                        片
                                                                δ
                                                                                         ద
                                                                                                           δ
                                                                                                                                     문
                                                                                                                                                     δ
                                                                                                                                                                               문
                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                           $
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 813; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14-0CT-1999
21-0CT-1999
21-0CT-1999
21-0CT-1999
21-0CT-1999
21-0CT-1999
21-0CT-1999
21-0CT-1999
22-0CT-1999
22-0CT-1999
22-0CT-1999
22-0CT-1999
22-0CT-1999
22-0CT-1999
22-0CT-1999
22-0CT-1999
22-0CT-1999
23-0CT-1999
26-0CT-1999
26-0CT-1999
28-0CT-1999
28-0CT-1999
28-0CT-1999
28-0CT-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1108
                                                                                                               1648
                                                                                                                                                                                                                                                     1468
                                                                                                                                                                                                                                                                                                 1408
                                                                                                                                                                                                                                                                                                                                              1348
                                                                                                                                                                                                                                                                                                                                                                                        1288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1168
                                                                                                                                      487
                                                                                                                                                                                   427
                                                                                                                                                                                                                               367
                                                                                                                                                                                                                                                                            307
                                                                                                                                                                                                                                                                                                                       247
                                                                                                                                                                                                                                                                                                                                                                  187
                                                                                                                                                                                                                                                                                                                                                                                                                127
                                                                                                                                                                                                                                                                                                                                                                                                                                                           67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTAGATTGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTG
                      AGAGTCCAGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATG
                                             CTGATTACCCAGCAGCCTGCAATGCAATGGAAGCCTTACTAGTTCATAAGGATCTTATGA
                                                                                                        TATATATTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAA
                                                                                                                                                     CTCAAATCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATATGCCACG
                                                                                                                                                                                TGCTAAAGCTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCT
                                                                                                                                                                                                                                            CTCGTAAIGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATTGCCAGATT
                                                                                                                                                                                                                                                                                         GTGGAAAAGAAGCTATCAAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTC
                                                                                                                                                                                                                                                                                                                                    ATGCCTTGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAG
                                                                                                                                                                                                                                                                                                                                                                                TICTIGAGAAAACAICTIGCCCATTAGGTGTTCTCTTAATTGTTTTTIGAGTCCCGACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGAGAATGAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTG
    AGAATGGTTTTCTCGATGATCTTATTTATGTTCTGCAAAACCAAAGGCGTCACTTTGTATG
                                                                                                                                                                                                                              CCGARATGGAAGATCCAATAGGCCGTGTATTRAAGAAACTCAGGTTGCAGATGATCTTR
                                                                                                                                                                                                                                                                                                                                                                                                                                    САЛАТАТСБААСАССТАТАЛАССАСАТАСТТАЛАЛАСАСАСАССТТССТСАТСАТТАС
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCGCTTAGTTATGAAGCCTGGGAAGATCTCAAGCCTTGCAGCTTCCGTTCGCCAGCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGAGAATGATTTAGATGTTGCTGCAGCACAAGAAGCTGGATATGAAGAGTCTTTGGTAG
                                                                                                                                      CTCAAATAAAAAACTCGACGAAAATCCCAGTGCTAGGCCATGCTGATGGAATCTGTCATG
                                                                                                                                                                                                                                                                            ĠŢĠĠĀĀĀĠĠĀĠĠĊŢĊĠŢĊĠĀŢĊĀĀĀŢĠĊŢĀŢĊŤĬĀĊĀĊĀĀĠĠŢĠĀŢĊĀĊŢĠĀŢĠĊĀĀŢŢĊ
                                                                                                                                                                                                                                                                                                                       ATGCACTTGTTCAGATAGCTTCGCTTGCAATCCGGAGTGGAAATGGTCTTCTGCTGAAGG
                                                                                                                                                                                                                                                                                                                                                                    TTTTAGAGAAGACCTCATCACCAATAGGTGTTCTTCTGATTGTTTTTGAATCCCGGCCTG
                                                                                           TATATGTTGATAAGTCTGGTAAACTGGACATGGCAAAGCGCATTGTTTCCGATGCAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24.3%;
ilarity 71.6%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S-0159638P

S-0159584P

S-0160741P

S-0160767P

S-0160770P

S-0160814P

S-0160981P

S-0161404P

S-0161404P

S-0161360P

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 619.8; DB 3;
Pred. No. 2.6e-167;
0; Mismatches 322;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1343;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                186
                                                                                                                                                                                                                                                                                                                                                                                                                                      1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1167
                           1827
                                                                                                                  1707
                                                                                                                                                                                                           1587
                                                                                                                                                                                                                                                      1527
                                                                                                                                                                                                                                                                                                   1467
                                                                                                                                                                                                                                                                                                                                              1407
                                                                                                                                                                                                                                                                                                                                                                                         1347
                                                 999
                                                                                             909
                                                                                                                                                              1647
                                                                                                                                                                                     486
                                                                                                                                                                                                                                426
                                                                                                                                                                                                                                                                            366
                                                                                                                                                                                                                                                                                                                        306
                                                                                                                                                                                                                                                                                                                                                                     246
                                                                                                                                                                                                                                                                                                                                                                                                                                                             126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
      726
                                                                                                                                         546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

ה. הראים
```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                             antiarteriosclerotic, vulnerary; gene therapy; hypoxia-regulated condition; tumourigenesis; angiogenesis; apoptosis; inflammation; erythropoiesis; glycolysis; gluconeogenesis; glucose transportation; catecholamine synthesis; iron transport; nitric oxide synthesis; cancer; ischaemic condition; reperfusion injury; retinopathy; neonatal stress; pre-eclampsia; atherosclerosis; inflammatory condition; wound healing; gene; ds.
                               New substantially purified polypeptide, useful for diagnosing or treating a hypoxia-regulated condition, such as cancer, ischemia, reperfusion injury, retinopathy, pre-eclampsia, atherosclerosis, inflammation, or wound healing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       human; disease state; cytostatic; antiinflammatory; ophthalmological;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human disease related protein DNA sequence SeqID180.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADD18749 standard; DNA; 3256 BP
                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                      Kingsman SM, White J,
                                                                                                                                                                                                                                         23-AUG-2001; 2001GB-00020558.
05-OCT-2001; 2001GB-00024037.
                                                                                                                                                                                                                                                                                                                            06-MAR-2003
                                                                                                                                                                                                                                                                                                                                                              WO2003018621-A2
                                                                                                                    P-PSDB; ADD18748.
                                                                                                                                                                                                                                                                                           23-AUG-2002; 2002WO-GB003892
                                                                                                                                                                                                          (OXFO-) OXFORD BIOMEDICA UK LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2188 GGCAAGTGGTGAATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    967
                                                                                                                                       2003-290046/28.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATAGTTCTATGGCCTGCACTGTTGAGTTTGATGATGTTCAATCAGCAATTGACCATA 1947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGGGCCAAGAGCAAGTGCAAAACTGAATATTCCGGAAACAAAATCATTTCACCAAGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCATCGTTATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAGTTCCAAGGCCTGCACCGTTGAAATTGTAGAAGACGTATATGGTGCTATAGATCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACAAGTTGTGGATGGAGACAATGGAATCGTTTACACCCATAAGGATCTTCCTGT 1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAATATTCCTCCGCCAAGTGGACAGTGCTGCTGTTTTCCACAATGCAAGCACAAGATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCACCAACATGGAAGTGCACACACTGATTGCATAGTGACGGAAGATAGTGAAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCGTGGTCCAGTTGGAGGTTGAAGGATTATTGACAACAAGATGGATAATGAGAGGAAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGATGGTTTTAGGTTCGGACTTGGTGCTGAGGTGGGAATAAGCACAAGCAGGATTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGATGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGACTTTTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                        Ward NR,
                                                                                                                                                                        Harris RA, Naylor S,
                                                                                                                                                                         Mundy CR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          966
```

Claim 27; SEQ ID NO 180; 424pp; English

```
$6666666666666666888
                                                                                                                                         This invention relates to novel human genes and gene product which are implicated in certain disease states. Compounds which modulate the proteins of the invention may have cytostatic, antiinflammatory, ophthalmological, antiarteriosclerotic or vulnerary activities. The sequences of the invention may be useful for gene therapy. The invention may be useful for diagnosing or treating a hypoxia-regulated condition, such as tumourigenesis, anglogenesis, apoptosis, inflammation, erythropoiesis, or the biological response to hypoxia conditions including processes such as glycolysis, gluconeogenesis, glucose transportation, catecholamine synthesis, iron transport or nitric oxide synthesis. The disease includes cancer, ischaemic conditions, reperfusion
                                                     injury, retinopathy, neonatal stress, pre-eclampsia, atherosclerosis, inflammatory conditions or wound healing. The present sequence is that of a disease related protein encoding DNA sequence of the invention.
```

Sequence 3256 BP; 828 A; 761 C; 832 G; 834 T; 0 U; 1 Other;

```
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               끊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            묽
                                                                                                               S
                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
밁
                                S
                                                                             밁
                                                                                                                                                          밁
                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 963; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
1220 ATCATCTGGCTGATCTGTTGACGGACCAGCGTGATGAGATCCTGTTAGCCAACAAAAAAG
                                                                                                                                                                                                                                        1043 CCCACCCAAAGGTGTCTGGGCACGTCATCACAGACATTGTGGAGGGGAAGAAGTT---G
                                                                                                                                                                                                                                                                                                                                                                 823
                                                                                                                                                                                                                                                                                                                                                                                                       923
                                                                                                                                                                                                                                                                                                                                                                                                                                              763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            506 AAATGGCAATTCCAGTCTTAGAGGCACGAGCCTGTGCAGCTGCCGGACAGAGTGGGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 349 ААААGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGA 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                    TAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTG
                                                                                                                                                                                                                                                                               TTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACA 942
                                                                                                                                                                                                                                                                                                                                                              AAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGT 882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGACAGCCCCCAGGTTCAGATGATGCAAAGCTTATTGATATATTTTATCCCGGA----G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGT 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCA 468
                                                                                                                    CAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATATTGC
                                                                                                                                                          GTACCTTCTTTCAGAAGTAAAGCCTGCAGGCCCTACTGTTGAGCAGCAGGAGAAATGG
                                                                                                                                                                                                                                                                                                                                                                                                       ATCAGCAGTCTGTGACATTTGGAACCAAGTCTAGAGTGGGAATGGGTGGCATGGAAGCCA 982
                                                                                                                                                                                                                                                                                                                                                                                                                                              АТАGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAAAAGC 762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACTGGCTGTGGAAAATGAAAACTGATCTCTTGATTGTTCTTTCAGATGTAGAAGGCCTTT 865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCCCAACAGTGACCTGCAGGGGGTTATTAGTGTTAAAGATAATGATAGCCTGGCTGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCCATATGAGGATTCATCTGG-----TATATTCTGGGATAATGACAGTTTAGCAGGAC 642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCCTTAGAATGAACATTGTCCCCATTGTCAACACAAATGATGCTGTTGTCCCCCCCAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ТАТТАGAТСТТАРАGTТАТАССАРТАТТТРАТGРАРАТGATGCCATCAGCACTAGAPAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCAT 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCAATTTGGATTTCCATGATGAGCAGAAGCGCCGGAACCTCAATGGAACACTTCATGAAC 685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TĠĠĊĊŦŦĠŦATĠAĠĠĊŦAŦĠŦŦŦŦAĊĊĊAĠŦAĊAĠĊAŦĊŦĠŦĠĊŦĠĊĊĊAĠAŦŦŦŦĠĠŦĠĀ
                                                                                                                                                                                                 AGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCG 1002
                                                                                                                                                                                                                                                                                                                          AGGTGAAAGCAGCCCTCTGGGCTTTGCAAGGTGGCACTTCTGTTGTTATTGCCAATGGAA 1042
                                                                               CGCGATCTGGAGGAAGGATGTTGGCCACCTTGGAACCTGAGCAGAGAGCAGAAATTATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches 877; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 341.2; DB 9; Length 3256; Pred. No. 7.4e-87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   565
      1279
                                                                                                                                                                   1159
                                                                                      1219
                                                                                                                               1062
                                                                                                                                                                                                                                                 1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7;
```

1123 ATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAA 1182

S

2191

AAGTGGT 2197

```
1300 CATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTTGAGTCCCGACCTGATGCCTTGGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1337 CCACATCCAAATTGAACAGCCTGGGCCATCGGTCTGCGACAGATCGCAGCCTCCTCCCAGG
                                                                 GTGGACCAGTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGC
                                                                                                                                                    ATGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCC
                                                                                                                                                                                                                   TCTTCCTGCAGCACGTAGACAGTGCCTGTGTGTTCTGGAATGCCAGCACTCGCTTTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATTTGCCTCCTATCTGACCTTCAGCCCCTCCGAAGTGAAGTCACTCCGAACTGAGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TATTTGÁCCAGATCATTGATATGCTGÁGÁGTGGÁÁCAGGTAÁÁAÁTTCATGCAGGCCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTA 1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGCTGCCTGTAATGCTTTGGAGACTTTGTTAATCCACCGGGATCTGCTCAGGACACCAT 1936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAG 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTCCGAGGCCAGTGTTGATAAGGTCACCAGGCTAGTCAGAGACTCTAAATGTGAATATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGTCAACTAA---GATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAAAATGATAGATCTGATCATTCCACGTGGCTCTTCCCAGCTGGTCAGAGACATCCAGA 1756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGG 1599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAAGGAGGCCGTGCAACTGGTGAATÁCCAGÁGAAGAAGTTGAAGÁTCTTTGCCGCCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTG 1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATIGCATCTITGGCAATICGAAGIGGTAATGGTCTTCTCCTAAAAGGTGGAAAAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGACTGTCCCAATTGGAGTTCTGCTGGTGATCTTTGAATCTCGTCCTGACTGTCTACCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAGCGTGGGACGTGTTTTGCGCCCGCACCCGAATCGCCAAAAACTTGGAACTGGAACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAA 1299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCG---TACCCTTGCAAATATGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTTGGAGGAGGC---AGAGGGGAGACTTGCAGCTCCTCTGCTGAAACGTTTAAGCCTCT 1336
                         GGGGACCAGTAGGACTTGAGGGACTGCTTĂCTTĂCTTACTTAGTGGCTGCTGCGĂGGGAAGGACC
                                                                                                                                                                                                                                                            CTTTTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTG
                                                                                                                                                                                                                                                                                                              ACAAGTATGGCAGCTCCCACACGGATGTCATCGTCACAGAGGACGAAAAACACAGGGGAGT
                                                                                                                                                                                                                                                                                                                                                            ATCGTTATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGCGCACAAAGCTCTGGGATT----TCCAAAAGCTGTTTCATTCATCATGAGTATA 1890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGCACACAGCAACCGGATTCTCCACCTCCTGACCCAGGAGGCTCTCTCAATCCATGGAG
                                                                                                                    ATGGTTACCGCTTTGGACTGGGAGCTGAAGTGGGAATCAGTACATCGAGAATCCACGCCC
                                                                                                                                                                                                                                                                                                                                                                                                      GGGACCTGGAATTATGCATTGAAGTAGTGGACAACGTTCAGGATGCCATTGACCACATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1456
                                                                                                                                                                                                                                                                                                              2176
                                                                                                                                                                                                                                                                                                                                                            2010
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1239
                                                                                                                                                                   2130
                                                                                                                                                                                                                                                                 2070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1876
                           2356
                                                                         2190
                                                                                                                                                                                                                   2236
                                                                                                                                                                                                                                                                                                                                                                                                         2116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1656
                                                                                                                    2296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1696
RESULT 11
AAC38250
ID AAC38250
AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX AC AAC38
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멼
10-JUN-1999;
10-JUN-1999;
14-JUN-1999;
16-JUN-1999;
16-JUN-1999;
17-JUN-1999;
                                                                                                                                        04-JUN-1999;
07-JUN-1999;
08-JUN-1999;
                                                                                                                                                                                                              14-MAY-1999
18-MAY-1999
19-MAY-1999
20-MAY-1999
21-MAY-1999
24-MAY-1999
25-MAY-1999
25-MAY-1999
28-MAY-1999
01-JUN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-APR-1999;
30-APR-1999;
30-APR-1999;
04-MAY-1999;
05-MAY-1999;
06-MAY-1999;
06-MAY-1999;
07-MAY-1999;
11-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-APR-1999;
23-APR-1999;
23-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-APR-1999;
06-APR-1999;
08-APR-1999;
16-APR-1999;
19-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-MAY-1999;
14-MAY-1999;
14-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25-FEB-1999;
05-MAR-1999;
09-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hybridisation assay; genetic mapping; gene expression control; protein identification; signal transduction pathway; metabolic; pathway;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            25-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EP1033405-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zea mays subsp. mays.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    promoter; termination sequence; corn; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zea mays DNA fragment SEQ ID NO: 20307.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAC38250;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAC38250 standard; DNA; 476 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACGIGGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2000EP-00301439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
99US-0137724P.
99US-0138094P.
99US-0138540P.
99US-0138847P.
99US-0139119P.
99US-0139453P.
99US-0139453P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0132486P.
99US-0132487P.
99US-0132863P.
99US-0134256P.
99US-0134218P.
99US-0134221P.
99US-0134221P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-0130891P.
99US-0131449P.
99US-0132048P.
99US-0132407P.
99US-0132484P.
                                                                                                                                                                                                              99US-0135629P.
99US-0136021P.
99US-0136392P.
99US-0136782P.
99US-0137222P.
99US-0137528P.
                                                                                                                                                                                                                                                                                                                                                         99US-0134768P.
99US-0134941P.
99US-0135124P.
99US-0135353P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUE6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SD66
SD66
SD66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .SD66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0126785P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0121825P
                                                                                                                                                                                             99US-0137502P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0132485P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99US-0123180P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -0130510P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -0130449P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -0129845P
```

밁 Ś 밁 Ś 밁 S 밁 Ş

1817 1657 Ś

В Ś 뮍

뭐

1697 1540 Ś 밁 Ś 밁 Ś 뮍 S 밁

1240

S 밁 5

1891 1997 1937

S 밁 8 밁 Ś 밁 ঠ 밁 Š В

18-JUN-1999; 18-JUN-1999; 18-JUN-1999;

```
Ś
             S
                                  맑
                                                                                                           밁
                                                                      Query Match 12.6%;
Best Local Similarity 79.8%;
Matches 379; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-AUG-1999;
27-AUG-1999;
27-AUG-1999;
30-AUG-1999;
31-AUG-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-AUG-1999;
17-AUG-1999;
18-AUG-1999;
20-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                           20-SEP-1999;
22-SEP-1999;
23-SEP-1999;
24-SEP-1999;
24-SEP-1999;
28-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20-AUG-1999;
20-AUG-1999;
23-AUG-1999;
23-AUG-1999;
25-AUG-1999;
26-AUG-1999;
27-AUG-1999;
                                                                                                                                                                                                                                                                                                                                           04-0CT
05-0CT
06-0CT
07-0CT
08-0CT
12-0CT
13-0CT
13-0CT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-SEP-1999;
15-SEP-1999;
16-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-SEP-1999
07-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .0-SEP-1999
           1316 TGTTCTTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGC 1375
                                                       1256
62
                                   N
                                  ACTTAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCATTAGG
TGTTCTTCTCATTATTTTTGAGTCTCGTCCTGATGCATTGGTCCAGATTGCATCTCTAGC
                                                                                                         99US-0149368P.
99US-014972P.
99US-014972P.
99US-014972P.
99US-0150864P.
99US-0150864P.
99US-0151066P.
99US-0151066P.
99US-0151066P.
99US-0151068P.
99US-016115933P.
99US-01611698P.
99US-01611698P.
99US-01611359P.
99US-01611359P.
99US-01611361P.
                                                                      Score 321.4; DB 3;
Pred. No. 1.2e-81;
0; Mismatches 96;
                                                                                         Length
                                                                         Indels
                                                                                         476;
                                                                        0,
                                                                         Gaps
  121
                                     61
                                                       1315
                                                                         0
```

99US-0139454P.
99US-0139456P.
99US-0139456P.
99US-0139456P.
99US-0139466P.
99US-0139466P.
99US-0139466P.
99US-0139466P.
99US-0139466P.
99US-0139466P.
99US-0139463P.
99US-014963P.
99US-014963P.
99US-014963P.
99US-014963P.
99US-014963P.
99US-014963P.
99US-014963P.
99US-014963P.
99US-014968P.

19-JUL-1999; 19-JUL-1999; 19-JUL-1999; 19-JUL-1999;

21-JUL-1999; 22-JUL-1999; 22-JUL-1999;

22-JUL-1999; 22-JUL-1999; 23-JUL-1999; 20-JUL-1999; 21-JUL-1999; 21-JUL-1999; 30-UWN 1999 31-UUN 1999 01-UUL 1999 01-UUL 1999 02-UUL 1999 06-UUL 1999 08-UUL 1999 12-UUL 1999 13-UUL 1999 14-UUL 1999 15-UUL 1999 16-UUL 1999 16-UUL 1999 16-UUL 1999 18-JUN-1999 18-JUN-1999 18-JUN-1999 18-JUN-1999 18-JUN-1999 21-JUN-1999 22-JUN-1999 23-JUN-1999

23-JUN-1999; 24-JUN-1999;

28-UUL-1999 02-AUG-1999 02-AUG-1999 02-AUG-1999 03-AUG-1999 04-AUG-1999 05-AUG-1999 05-AUG-1999 06-AUG-1999 09-AUG-1999 10-AUG-1999 11-AUG-1999 11-AUG-1999 11-AUG-1999 11-AUG-1999 11-AUG-1999 11-AUG-1999

Hurban P;

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
Gorlach J,
Rameaka JG,
Garcia CA,
                                                                                                                                                                                                                                                                                                                                                                                                                   Thale cress; gene; ds; genetic manipulation; plant; biosynthesis; genetic modification; environmental stress; disease resistance; fungicide; insecticide; stress tolerance.
                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Arabidopsis thaliana polynucleotide #368.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20-FEB-2003 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABX57016 standard; DNA; 564 BP
                                                                                                (GARC,
(KRIC,
(SLAT,
                                                                                                                                                                      (RAME)
(PAGE)
(MATH)
                                                                                                                                                                                                                                                                                              27-JAN-2000; 2000US-0178503P
                                                                                                                                                                                                                                                                                                                    26-JAN-2001; 2001US-00770152.
                                                                                                                                                         (LEDF
                                                                                                                                                                                                                                               (HAMI/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1676 TATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCAGCCTGCAAT 1730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1616 TGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAATCAGCTGACATGGA 1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1376 AATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACAC 1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       182 AATATTACACAAGGTCATAACTGGAGTTATTCCCGATACTGTTGGCAAAAAGCTCATAGG
                                                                                                                                                                                                       PAINES T M.
                                                                                               MATHEW A V.
LEDFORD B L.
WOESSWER J P.
HAAS W DE.
GARCIA C A.
KRICKER M.
SLATER T.
                                                           DAVIS K R.
ALLEN K.
HOFFMAN N.
                                                                                                                                                                                                                                             HAMILTON C M.
                                                                                                                                                                                                                                                                       GORLACH J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCC 1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGG 1495
                                                  HURBAN P
                                                                                                                                                                                                                                                            AN Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTTGTGACTAGCAAAGAGGAAATTGCTGATCTAGCGCTTGATGATGTAATTGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATCCGAAGTGGTAATGGTCTCCTTTTGAAAGGAGGGAAAGAAGTTATGAGATCAAATGC 181
                                                                                                                                                                                     PAGE
                                                                                                                                                                                              RAMEAKA J G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATGGCAAAACGGATAGTATTGGATGCTAAGATTGATTATCCAGCAGCATGTAAT 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTTTTAGGTCATGCTGATGGTATCTGCCATGTTTACATTGACAAATCAGCCGACATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTCATTCCGAGAGGTAGTAAGTCTCTAGTTTCCCAAATCAAAGCAACAACTAAGATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGATGATCATTGATCT 1555
An Y, Hamilton CM,
, Page A, Mathew AV
Kricker M, Slater'
 Mathew AV,
I, Slater T,
Price JL, Raines TM,
Ledford BL, Woessne
Ledford RL, Woessne
   Hoffman
              Haas WD;
     z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
```

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                       밁
                                                                                                                          S
                                                                                                                                                                            밁
                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention relates to Arabidopsis thaliana nucleic acid sequences. The CC DNA sequences and the polypeptides they encode are useful for identifying CC homologous or related genes, for producing compositions that modulate the expression or function of the protucing compositions that modulate the CC expression or function of the protein, in diagnosis, for studying associated cregions of the protein, in diagnosis, for studying associated plant cells, in screening assays of various plant strains to determine the strains that are capable of withstanding a particular disease or environmental stress, for enhancing or inhibiting production of transgenic organisms, such as plant coreate genetically modified and transgenic organisms, such as plant cells and plants. Transgenic plants care useful for introducing or improving disease resistance and stress conclusions of introducing or improving disease resistance and stress conclusions and insecticides, and for elucidating biochemical pathways. Sequences ABX5649-ABX57647 represent Arabidopsis thaliana conjuncteotides of the invention. Note: The sequence data for this patent conduction format directly from USPTO at sequence sobtained in
                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 399; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel Arabidopsis thaliana nucleic acid useful for identifying homologous or related genes, and to create genetically modified and transgenic organisms, such as plant cells and plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; SEQ ID NO 368; 45pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2003-110410/10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 564 BP; 151 A; 112 C; 139 G; 162 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1276 CTGATGATTTAGTTCTTGAGAAAACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1396 TTCTCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAA 1455
                                                                                                                                                                                                                                                                                                                                                                                              1516 AGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTA 1575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1456 CTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATG
                                                                                                                                 1696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   129
                                                                                                                                                                                                                                                                                                                                                                                                                                                189
  489
                                                                                                                                                                                                                                                                   309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATCCCGACCTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     <u> дегосовасстватессттесттсаваттесатстттессавттсеваветестватестс</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCGATGGTCTTGTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTG
                                                                                                                               TTCTGCTGAAGGGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCA
AGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAG
                                                                                       CTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATA 488
                                                                                                                                                                                                                       GTATATGCCACGTATATATTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAA 1695
                                                                                                                                                                                                                                                                   ACAAGCTTGTTACTCAGATAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATG
                                                                                                                                                                                                                                                                                                            ATAAGCTTGTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATG 1635
                                                                                                                                                                                                                                                                                                                                                         AGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGATGCAATTCCAGAGACTGTTGGGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAAA
                                            AGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAG 1815
                                                                                                                                                                            GAATCTGTCATGTATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTT 428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12.0%;
71.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 304.8; DB 7; Length 564; Pred. No. 8.1e-77; O; Mismatches 157; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1335
         548
                                                                                                                                                                                                                                                                           368
                                                                                                                                                                                                                                                                                                                                                                  308
                                                                                                                                                                                                                                                                                                                                                                                                                                                     248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1515
```

0

1816 TTAATATTTATGGTGG 1831

밁

549 TCACTTTGTATGGTGG 564

```
JAC78003
JAC78003
JAC78003
JAC78003
JAC78003
AAC78000
XX
AAC78000
XX
AAC
CCC
AAAC
CCC
AAC
CCC
CCC
AAC
CCC
AAC
CCC
AAC
CCC
CCC
AAC
CCC
AAC
CCC
AAC
CCC
AAC
CCC
AAC
CCC
Query Match
Best Local S
Matches 813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       antidiabetic; antiasthmatic; antirheumatic; antiarthritic; antiviral; antiinflammatory; antithyroid; antiallergic; antibaterial; cardiant; dermatological; neuroprotective; thrombolytic; coagulant; noctropic; vasotropic; antipsoriatic; antiangiogenic; gene therapy; inflammation; immune disorder; haematopoietic cell disorder; autoimmune disorder; haematopoietic cell disorder; autoimmune disorder; parft versus host disease; organ rejection; haemostatic; thrombolytic; cardiovascular disorder; infection; neurological disease; drug screening; ss.
                                                                                                                                                                                               or inhibiting the proliferation, differentiation or mobilisation of immune cells, to treat disorders of haematopoietic cells, autoimmune disorders, allergic reactions, graft versus host disease and organ rejection, modulate haemostatic or thrombolytic activity, modulate inflammation, cancers, cardiovascular disorders, neurological disease and pacterial or viral infections. The peptides, nucleotides, antibodies, agonists and antagonists may be also be used in drug screens. AAC78449 to AAC78457 and AAB44240 represent sequences used in the exemplification of
                                                                                                                                                                                                                                                                                                                                                                                                                             antidiabetic; antiasthmatic; antirheumatic; antiarthritic; antiinflammatory; antithyroid; antiallergic; antibacterial; antiviral; dermatclogical; neuroprotective; cardiant; thrombolytic; coagulant; nootropic; vasotropic; antipsoriatic and antiangiogenic. The polymucleotides and polypeptides can be used for preventing, treating or ameliorating medical conditions and diagnosing pathological conditions. Polymucleotides, polypeptides, antibodies, agonists and antagonists from Polymucleotides, polypeptides, antibodies, agonists and antagonists from Polymucleotides, polypeptides, antibodies, agonists and antagonists from the present invention may be used to treat immune discrete by activating the present invention may be used to treat immune descriptions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel isolated nucleic acids comprising sequences encoding useful for treating or diagnosing e.g. cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     08-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAC78003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAC78003 standard; cDNA; 2507 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAC77607 to AAC78448 encode the human cancer associated proteins given AAB443398 to AAB44239. The proteins can have activities based on the tissues and cells the genes are expressed in. Example of activities include; cytostatic, proliferative; vulnerary; immunomodulator;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; Page 940; 2352pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rosen CA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               08-MAR-2000; 2000WO-US005882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200055350-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; cancer associated gene; cancer antigen; detection; cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human cancer associated gene sequence SEQ ID NO:397
   Local Similarity
nes 813; Conserv
                                                                                                                                                                         present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2000-587533/55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAB43794.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ruben SM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cytostatic;
      Conservative
                                                                                                                                                                         invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                     BP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99US-0124270P
                                                                                                                  667 A; 566 C; 621 G; 645 T; 0 U; 8 Other;
                           10.9%; Score 278.2; DB 3; 51.6%; Pred. No. 8.9e-69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 proliferative; vulnerary; immunomodulator;
         Mismatches
         739; Indels
                                                          Length 2507;
         22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           peptides
      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        띩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                        밁
                                                                                   Ś
                                                                                                                                                       밁
                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                      片
                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62
```

```
1176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1116 GAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTG 1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   636 GCAGGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGAT 695
                                                                                                                                                                                                                                                                           893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    936 TTTCACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCT 995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGCCCGACTGGCTGGAAATGAAAACTGATCTCTTGATTGTTCTTTCAGATGTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACAGCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGCCTTTTTGACAGCCCCCCAGGTTCAGATGATGCCAAAGCTTATTGATATATTTTATCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGTTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAĂĠĊĊĂĂĠĠŦĠĂĂĂĠĊĂĠĊĊĊŤĊŤĠĠĠĊŤŤŦĠĊĂĀĠĞŦĠĠĊĂĊŦŦĊŦĠŦWĠŦWATTĠĊĊ
GTATGTGGATTCCGAGGCCAGTGTTGATAAGGTCACCAGGCTAGTCAGAGACTCTAAATG 1072
                                                          ATATATTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAAC 1708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCCCAGGACAGCGTGGGACGTGTTTTGCGCCGCACCCGAATCGCCAAAAAACTTGGAACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGGAAGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCG---TACCCTTGCAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAAAGACTTGGAGGAGGC----AGAGGGGAGACTTGCAGCTCCTCTGCTGAAACGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTATICCATICATICTGGCTGATICTGTTGACGGACCAGCGTGATGAGATCCTGTTTAGCCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAATGGCGCGATCTGGAGGAAGGATGTTGGCCACCTTGGAACCTGAGCAGAGAGCAGAA 415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTGCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTT---GGTACCTTCTTTTCAGAAGTAAAGCCTGCAGGCCCTACTGTTGAGCAGCAGGGA 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATGGAACCCACCCAAAGGTGTCTGGGCACGTCATCACAGACATTGTGGAGGGGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAGATCAGCAGTCTG---TGACATTTGGAACCAAGTCTAGAGTKGGAATGGGTGGCATG
                                                                                                                                                                                                                                                                                                                                      ААССТТСАТСАТСАТСТВЕТСТСТСАСТССААСАССАВСТАВТВАТВАССТТСТСТСАВ 1592
                                                                                                                                                                                                                                                                                                                                                                                                               CATGGAGTCAAGGAGGCCGTGCAACTGGTGAATACCAGAGAAGAAGTTGAAGATCTTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTA 1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGT 1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTACCCCAGGTGGCAGCTTTGGCTATCGCAAGTGGCAATGGCTTGTTACTCAAAGGAGGG 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGA 1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACAAGTGACTGTCCCAATTGGAGTTCTGCTGGTGATCTTTGAATCTCGTCCTGACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGAAAACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCC 1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCCTCTCCACATCCAAATTGAACAGCCTGGCCATCGGTCTGCGACAGATCGCAGCCTCC 592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAAT 1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTGGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTC
                                                                                                                                                                                                      ATCAAGGCGTCAACTAA---GATTCCTGTTCTTGGGCATGCTGATGGTATATG-CCACGT
                                                                                                                                                                                                                                                                           CGCCTAGACAAAATGATAGATCTGATCATTCCACGTGGCTCTTCCCAGCTGGTCAGAGAC 952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGGAGGCTGCACACAGCAACCGGATTCTCCACCTCCTGACCCAGGAGGCTCTCTCAATC 832
                                                                                                                                       ATCCAGAAAGCTGCTAAGGGGATTCCAGTGATGGGGCACAGCGAAGGGATCTGTGCACAT 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          875
```

```
RESULT 14
ABL12989
ID ABL12
 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                             Drosophila melanogaster expressed polynúcleotide SEQ ID NO 33449.
                               New isolated nucleic acid genes from Drosophila and
                                                               WPI; 2001-656860/75.
P-PSDB; ABB68886.
                                                                                                                                       23-MAR-2000; 2000US-0191637P.
11-JUL-2000; 2000US-00614150.
                                                                                                                                                                                                                                                                                                                    26-MAR-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                               ABL12989 standard; cDNA; 2849 BP.
Claim 1; SEQ ID NO 33449;
                                                                                                                                                                                               27-SEP-2001.
                                                                                                                                                                                                                                                              pharmaceutical; gene; ss
                                                                                                                                                                                                                                                                       Drosophila; developmental biology; cell signalling; insecticide;
                    interactions
                                                                                                                                                                         23-MAR-2001; 2001WO-US009231
                                                                                                                                                                                                                     WO200171042-A2
                                                                                                                                                                                                                                         Drosophila melanogaster.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1073
                                                                                                                                                                                                                                                                                                                                                                                                                    1553 GAAGGACCACGTGGT 1567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'n
                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGTGGGCAAGTGGT 2197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGTCCAGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGG 1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAATATCCAGCTGCCTGTAATGCTTTGGAGACTTTGTTAATCCACCGGGATCTGCTCAG 1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCACGCCCGGGACCAGTAGGACTTGAGGGACTGCTTACTACTAAGTGGCTGCTGCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ccarecceregaccaerererreasecrerreraacracaerearearerreceae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTTTCTGATGGTTACCGCTTTGGACTGGGAGCTGAAGTGGGAATCAGTACATCGAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCACATCCACAAGTATGGCAGCTCCCACACGGATGTCATCGTCACAGAGGACGAAAAACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAGTATGGGGACCTGGAATTATGCATTGAAGTAGTGGACAACGTTCAGGATGCCATTGA 1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTGATGATGATCAGCAATTGA 1942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGCCCCAAATTTGCCTCCTATCTGACCTTCAGCCCCTCCGAAGTGAAGTCACTCCGAAC 1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACACCATTATTTGACCAGATCATTGATATGCTGAGAGTGGAACAGGTAAAAATTCATGC 1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCGGAGTTCTTCCTGCAGCACGTAGACAGTGCCTGTGTGTTCTGGAATGCCAGCACTCG
                                                                                                                     CORP NY.
                                                                                                Adams M,
                                                                                                 PWD,
21pp +
                              detection reagent for detecting 1000 or more for elucidating cell signaling and cell-cell
                                                                                                Myers EW;
 Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2062
                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               $66666666688$$
                  Ś
                                             밁
                                                                 S
                                                                                                          S
                                                                                                                                  밁
                                                                                                                                                   8
                                                                                                                                                                          밁
                                                                                                                                                                                               Ş
                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                           유
                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                        片
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
    1330 AGCGGACTGGCCAAGCCGTTGCTGTCGCGGCTCTCGCTCAACCCGGCCAAGCTAAAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                           742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     912;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The invention useful in developmental biology and in elucidating cell signalling and cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABI16176-ABI30511), expressed DNA sequences (ABI0404-ABI6175) and the encoded proteins (ABI6777-ABB72072). The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly. from WIPO at ftp.wipo.int/pub/published_pct_sequences <u>بر</u>

Sequence 2849 BP; 654 A; 796 C; 862 G; 537 T; 0 U; 0 Other; 384 GCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGAT 443 h 10.8%; Score 276.4; DB 4; Similarity 49.5%; Pred. No. 3.2e-68; GCTGCGGTGGGTCAGTCGGGTCTGATGTCCCTCTACGACGCGATGTTTGCCCAGTACGGC 621 Mismatches 886; Indels 45; Length 2849;

1143 GCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAAGC 1202 504 CAACTCACTGAAACTGTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAA 563 444 GTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAG GAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAGTT GGCAAAAAGTCAAAGGTGGGTACTGGCGGCATGGACTCCAAGGTGAAGGCAGCCACCTGG ----TATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGAAA 662 AATGATGCCATCAGCACTAGAAAGGCTCCATATGAGGATTCATCTGG--------AATCTCTTCTGCACGCTCTCCGAATTAATTAGCCTGAATATTGTGCCAATCATAAATACT 741 ATGCAGGCCCTCACGCCCGCTCAGAGGGCCAGTGCTGTCAACACCCTGGCCGATCTGTTG CTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATATTGCTAGATGTTGCAGATGCTTTG AGCGCCAATGCAGTGCAGTCGAGGTGATGGCCGAGAACGCGCGAACCGGGAGTCGCCAG AAAGTTCTTCATGGGGAAAAATTGGTACTCTCTTTCACAAGAATGCGAATTTGTGGGAA GGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGTGAAGGCTGCTGTCTTG GACGGGGCCAAGCTGATGCACATACACCAGCG---ACGACAGCAACAGCATCGAGTTT GCGGATCTGCTAATCCTCATGTCGGACGTCGATGGCATCTACAATAAGCCGCCGTGGGAG 921 GCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTGAA 722 AGGGGTATTCCCATTAAGGACAACGACAGCTTGTCTGCCATGCTGGCCGCCGAGGTGCAG 861 GTCAAGATAGCCCAGGTGCTCGTGACCAAGCCGGACTTTTACAACGAGGAAACACGCAAC 681 TCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGCAT 1022 ACCATAATTGGCGGCCGGAAGGTGGGCACCTTCTT-----CACGGAGGCCACCGAG 1149 GCCCTGGACCGGGGCGTCAGCGTGGTCATCTGCAACGGAATGCAGGAGAAGGCCATCAAA 1098 CCATCATCAAAAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGAAATCACTTTT GTGAGCCGCGAGAAGTTTATCCTGGACGCCAATGCCAAGGACCTGGCCGAGGCGCAGAAAG 610 1329 1082 902 1038 782 801 1269 842 1209

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
RESULT 15 ABA90521 16/c Continuation (17 of 24) of ABA90521 from base 1600001 (Genomic sequence of Lactococcus
                                                                                  밁
                                                                                                           Ş
                                                                                                                                               밁
                                                                                                                                                                         Ş
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1450
                                                                                                                                                                                                                                                                                                                                                                         1911 GAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1797 ССАСТАЛАЛАСАGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTCTGGGA 1856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1930 GÁGACCCTGCTGATCCACGAGGÁCCTGATGAGTGGCGCAATCTTCGGCGATGTCTGCAAC 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1630 CTTATGGAGCTGGTCAAGGAGGCGCTGGCCACCGTGGGAGCGGGAGCACGCCGTGTCACTG 1689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1440 TIGCATAAGGITATAACTGAIGCTATICCTCGIAAIGTIGGIGAAAAACTTATIGGCCIT 1499
                                                                                    2350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTCTTGGGCATGCTGATGGTATATGCCCACGTATATATTGACAAATCAGCTGACATGGAT 1676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTTCCACGCGCGAGGAGATCAGCGATCTGCTGTCCATGGAGAACCACATCGACCTGATC 1749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCTCGGCCAACGGACTGCTCCTCAAGGGGGGGCAAGGAGGCGGCACACAGCAACAAGGCC 1629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACGATA 1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTACTGGTCATCTTCGAATCCCCGCCCAGACTCGCTGCCTCAAGTGGCCGCCTTGGCAATG 1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGACGCACCCGCCTTGCGGATCAGCTGGAGCTCAAGCAGGTCACTGTGCCCATAGGCGTC 1509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCCATTAGGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCTCCGTTGGCCTGAAGCAAATCGCCGAGGACAGTCACAAGAATGTTGGTCGTGTCCTG 1449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTA 1796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATT 1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CT---TGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTT 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGGCCCTGCGCATTGCACGCGACGCCAAGTGCGATTATCCGGCTGCTTGCAACGCCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCCTGCAATGCAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGCTGGGCCACGCCGAAGGCGTCTGCCACGTCTATATCGACAGGGATGCGGATCTGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTCCGCGCGCTCCTCCGACCTGGTGCGCAGCATCCAGCAGCAGTCGCTGCACATCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGCTGAAACGTGAGGGCGTCAAAATCTATGCCGGACCCCGGCTGAACCAGCAGCTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATC---AAGGCGTCAACTAAGATTCCT 1616
                                                                                    GGGCTGCTGACCACCAAGTGGATCCTCGAGGGGCAGGACCATG 2392
                                                                                                              GGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAG 2193
                                                                                                                                                 GGTGCCGAGGTGGGCATCTCCACTGCCCGGATCCACGCCCGCGGGCCTGTGGGAGTGGAG
                                                                                                                                                                                GGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAA 2150
                                                                                                                                                                                                                 AGCGCCTGTGTGTTCCACAACGCCAGCTCCCGGTTTGCGGACGGTTTCCGGTTTGGCCTT
                                                                                                                                                                                                                                              AGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCCTCGTTTTGGATTG 2090
                                                                                                                                                                                                                                                                               ACGGATGTCATTGTTACGGAAAATGATGCGGCGGCCAGGCAGTTCCTGGGCAGCGTGGAC
                                                                                                                                                                                                                                                                                                          ACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGAT 2030
                                                                                                                                                                                                                                                                                                                                             TTTGGCCCGCCGGCGGCCAAGAGCCTGAAGCACGAGTACGGCGCCCTCGAGTGCTGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                          TTT-----CCAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATGGCCTGCACTGTT 1910
                                                                                                                                                                                                                  2289
                                                                                                                                                                                                                                                                                 2229
                                                                                                                                                                                                                                                                                                                                                                                                               2109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1809
                                                                                                                                                    2349
        ட
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                    Ś
                                                                                 S
                                                                                                                   밁
                                                                                                                                               Ś
                                                                                                                                                                                 밁
                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                뮹
                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 9.6%;
Best Local Similarity 48.4%;
Matches 892; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Fragment Name
ABA90521 00
ABA90521 02
ABA90521 02
ABA90521 03
ABA90521 04
ABA90521 06
ABA90521 06
ABA90521 07
ABA90521 10
ABA90521 11
ABA90521 12
ABA90521 12
ABA90521 15
ABA90521 15
ABA90521 16
ABA90521 17
ABA90521 17
ABA90521 18
ABA90521 18
ABA90521 18
ABA90521 18
ABA90521 18
ABA90521 18
ABA90521 19
ABA90521 19
ABA90521 21
                                                                                                                                                                                                                                                                                                                 52160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2100001
2200001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2300001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1900001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100000:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1600001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1500001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1400001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            130000:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1100001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600001
700001
800001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       500001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           90000
```

```
Sequence split into 24 fragments
                                                                                                                                                                                             51980 AAAATGGTCAAGAAATGGTTCTGACCAATGGCGAACGGATTCGAGAGATTAAAGAAATTA 51921
                                                                                                                                                                                                                                                                                                                                                                                                            52100 AAATTTTTAATGAAATTCATGAAATTACTGATGAATTACGTCAAATGGCTGGTGGTGCCG 52041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           52331 GTCGTGAGAATGCTGAAAATGCACTAAATGCGTTACTTGGGCTTGGGATTATTCCAATTA 52272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52391 GTTATTCGCAAAAAGTTTCTCAGTTACTTTTGACACGTGATGTGACTGATTTTCCAACGA 52332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52451 AGGCTTTGGCTTCAATCGGTCAGGTTGAATTGATGAGTCTTTATACGCCAAATGTTTCGTC 52392
970 AGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGCATCTACAGA 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         436 AACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATTTTGAGAACCCCAAAGT 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    376 AGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACGATATGTTGTTTAACC 435
                                                                                                                                                                                                                                            GTTCGCGTTTTGGAACTGGCGGGATGACTTCAAAATTGGCGGCTGCACAGATTTTATTTG 51981
                                                                                                                                                                                                                                                                                                                                                          AATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGTGAAGGCTGCTGTCTTGGCTTCAA 849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   тсатасасасттататталадалалассатсадсал ----- далатсастттт сдадаса 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTATGCTGTCAGATATCGATGGACTTTTTGATAAAAATCCATCGATTTATGATGATGCGA 52101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGGATTCATCTGGTATAT 615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTAAAGTTATACCAATAT 555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAA 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGGTGATAATGATAAATTGGGAGCGATTGTTTCTAAATTAGTGAATGCTGATTTATTGA 52161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTA 675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTAATGAAAATGATGCTATTGC------GGTTGATGAAATGGATCATCAAACAAAAT 52221
                                                                                 TCGAAGGACGTGAGATTGGGGACTTATTTTCATCAAAAATC--TTGAGAAAGAAGGATAAA 51863
                                                                                                                                TTCATGGGGAAAAAATTGGTACTCTCTTTCACAAGAATGCGAATTTGTGGGAATCATCTA 969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 245.4; DB 6; Length 110000; Pred. No. 2.3e-58; 0; Mismatches 911; Indels 40; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               110000
210000
310000
610000
610000
610000
710000
910000
910000
1110000
1210000
1510000
1510000
1510000
1510000
1510000
22100000
22100000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2365589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   End
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ABA90521 Accession Aba90521
```

Ś

유성

8 8 8 8

Ś

g

& B

뮍

유정

밁

δ β

밁

유 - 성

```
Qy 2092 GTGCTGAGGTTGGCATAAGCACAGGGGGTATCCATGCCCGTGGACCAGTGGGTGTTGAAG 2151
Db 50727 GTGCTGAAATTGGCATTCAACTCAAAAACTTCATGCCAGGGGCCAATGGGCTTAAGAGG 50668

Qy 2152 GTCTCTTAACTACAAGATGGATCTTGGGACGAGGGACGAAGT 2194
Db 50667 CTCTAACCTCAACAAAATATCTGATTGATGGCACAGGACAAAT 50625
```

Search completed: March 10, 2004, 11:20:21 Job time: 890.685 secs

```
OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27513289 segs, 14931090276 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-10-026-767-1
2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       March 10, 2004, 10:40:15; Search time 5817.64 Seconds (without alignments) 13084.110 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 gcggctgcggcaaggcg.....tgtgattgcacatatactaa 2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                               em httc:
gb est1:
gb est2:
gb est2:
gb est3:
*
                                                                                                                                                                                                                                                                                                                                                     em_estpl:*
                                                                                                                                                                                                                                                                                                                                                                                    em_esthum: *
em_esthun: *
em_estmu: *
em_gss_pln:*
em_gss_vrt:*
em_gss_mam:*
em_gss_mam:*
em_gss_mos:*
em_gss_roc:*
em_gss_vrt:*
em_gss_vrt:*
gb_gss1:**
                                                                                                                                                                                                                                                                                                                                          em_estro:*
                                                                                                                                                                     em_gss_hum:*
em_gss_inv:*
                                                                                                                                                                                                    em_estfun:*
em_estom:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        55026578
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

4.	ω	N	_	Result No.
575.2	891.6	1162		score
22.6	35.0	45.6	55.3	Query Match 1
787	1685	1961	2627	Query Match Length DB
14	11	H	13	8
CD893850	AY105865	AY109740	BU103703	ength DB ID
CD893850 G118.124L	AY105865 Zea mays	AY109740 Zea mays		Description

		-																																							
4. U	ì,	44	3	42	41	40	39	ა 8	37	36	ω 5	3 4	33	32	31	ω 0	29	28	27	26	25	24	23	22	21	20	19	18	17	9	5	14	13	12	11	10	ø	00	7	თ	ທ
ŭ	3 (Л	57.	•	60.	ത	464		g	σ	72	72.		75.	76.	77.	78.	80.	82.	87.	87.	88.	96.	97.	유 -	<u>ဒ</u>	50			υı W		40	5	42.	543.6	48.	55.	წ	ເກ	٠	63.
`	1	1		.7	œ	œ	æ	8		8	8	8	œ	.00	8	.	8	œ	8	9.	9	9	9	9	9	9	9	9	20.0	٥.	יי ני	_	_			۲	۲	۲	Ľ	••	
-		$\overline{}$	N	W	~1	œ	N	w	N	រោ	C	S	ы	w	ப	0	w	w	(J)	ш	~3	4	4	4	w	4	U)	N	651	N	4	8	J	(J)	N	മ	N	\vdash	ω	Œ	w
F		14	14	13	12	14	14	14	14	14	12	<u>1</u> 3	14	13	12	14	14	13	10	14	14	9	ü	<u>1</u> 3	13	L U	L)	<u>+</u> 2	14	13	14	ü	9	13	14	14	14	14	14	φ	14
/001	3 (5246	3358	3044	0257	4009	A24560	4180	9462	8998	w	1448	8361	7947	6933	9936	4321	7373	5563	0252	0790	6922	9330	8950	8816	7256	8979	0894	CA998314	2593	938	066359	432804	3128	2020	A50166	75408	A49825	86983	094664	N
ACT TO THE	679518 WS1 16 F	A452463 Rxo-2 F0	133581	130448	02572	240091 SCSBFL40	245608 SCBGFL50	441807 EST67815	194626	89985 G118.113	72961 BJ472961	14485 SCRFLB10	3610	79475 1091036A	69337	99361 FGAS0078	43211 wrils.pk	A073737 SCEQAM10	F255633 HVSMEf00	02523	D907907 G468.108	066922	93306	89509	89168	72568	89790	08943 HVSMECOO	CA998314 S345B D01	25934 SCRULR10	19380 G608.113	63590	2804	31282 SCBFRT10	202039	01661 WHE4037	754084 BR040010	98255 WHE3241	9839 AZC2.	94664 AU094664	69253 AZO2.

ALIGNMENTS

PUBMED COMMENT	JOURNAL	TITLE	REFERENCE AUTHORS		SOURCE ORGANISM	VERSION KEYWORDS	ACCESSION	LOCUS	RESULT 1
1233139 Contact: Nogueira FTS Bioinformatics Lab Bioinformatics Lab Organization for Nucleotide Sequencing and Analysis C.P. 6176, Campinas, SP 13083-970, Brazil Tel: 55 19 37881101 Fax: 55 19 37881089	low temperature Plant Dhysiol. 132 (4), 1811-1824 (2003) 227953109	Arruda, P. RNA expression profiles and data mining of sugarcane response to	1 (bases 1 to 2627) Nogueira, F.T.S., de Rosa, V.E. Jr., Menossi, M., Ulian, E.C. and	Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Saccharum.	Saccharum officinarum	BUI03703.1 GI:32815034 EST	Saccharum officinarum cDNA, mRNA sequence. BU103703	BU103703 2627 bp mRNA linear EST 12-AUG-2003 SCJFLR1073H12.g Saccharum officinarum mRNA (Nogueira, F.T.S)	

*	B 8	유 성	Å Å	ß &	dg Qy	g	Db Qy	Qy db	ДУ	dg VQ	g Qy	Qy dd	QQ VQ	рь .	Db Qy	Query Best 1 Match	ORIGIN	FEATURES sou
	893 GAGCATTCTTAAAGTTCTTCATGGGAAAAAATTGGTACTCTCTTTCACAAGAATGCGAA 952	833 TGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAAAATCG 892	773 AATCACTTTTGGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGTGAAAGC 832	713 ACCAAGTGAACCATCAACAACAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGA 772 	653 GGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCC 712	593 ATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACT 652	533 AGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCC 592	473 CAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATT 532	413 TCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACCTTCTTGTCACCGA 472	353 GCCACAGATGGAGTTAGATGGAAAGGCTTGTTGCCGCTGTTGGTCAGAGTGGACTGATGGC 412	293 GGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAA 352	233 TAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTTGGAGT 292	173 TGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAGCAGGT 232	113 CCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAGGTGGGCACTGCAGT 172	53 GGAGAGGGTGGAGGAGGAGGGCTGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCGA 112	Query Match 55.3%; Score 1409.2; DB 13; Length 2627; Best Local Similarity 77.3%; Pred. No. 0; Matches 1711; Conservative 0; Mismatches 503; Indels 0; Gaps 0;	9 T	Email: tebaldi@unicamp.br. RES Location/Qualifiers source 12627 /organism="Saccharum officinarum"
_							-			-	·							
8	g d	} B #	S B 1	8 B :	ð. B. 1	\$ B \$	B &	S B &	S B &	S B &	S B 2	5 8 8	S B &	}	? B &	S B 8	B 8	Qy db
2033 TGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGG	014	44 (co co	ω ru 4. ω	74	1713 AATGGAGACCTTACTAGGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATT	1 4 C	4 6		1403 TGGCCTTTAGAAAGGTCATAACTGGGGTTATTCCTGAGATATTGTTGGTTAAAAAGCTCATTGA	414	54	1233 GRIACII AMARIACAGAGGI IGUIGA IGRII REGITATORI CI GARAGAGATATUGCOCATU	1234 GATAACAAGCCTTGCAAGATCCATTCGTGCCATTGCTGACATGGACGACCCTATTTCCCA	74	1073 AGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAAATGAAGCTGAGTAGATGTAGCTGCTTGAGAACTGAGGAGCTGAGAAATGAAGCTGAGAAATGAAGCTGAGAAATGAAGCCGATGTTGAGGGCT1114 TGATGCTTGGAAAATGAAGCAAAATGAAGGAATGTTTGAGGGCT1114 TGATGCTTGGAAAATGAAGCAAAATGAAGCAATGTTTGAGGAAAAAAACCAAGAAAA	1013 TTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGATGTTGC	953 TTTGTGGGAATGTTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTG

Query M Best Lo Matches Qy Db Qy	ORIGIN	FEATURES source	REFERENCE AUTHORS TITLE JOURNAL COMMENT	REFERENCE AUTHORS TITLE JOURNAL	AY10974 L AY10974 LOCUS DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM	Db Oy Db Oy Db Oy Db Oy Db Db Oy Db
Query Match 45.6%; Score 1162; DB 11; Length 1961; Best Local Similarity 81.5%; Pred. No. 5.1e-229; Matches 1309; Conservative 0; Mismatches 297; Indels 0; Gaps 0; 647 GGCACTGGAAGCTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGGGATGGGTTGTATAG 706	/mol type="mark" /mol type="mark" /db_xref="MaizeDB:631239" /db_xref="MaizeDB:631239" /db_xref="mark" /clone_lib="Maize Mapping Project/DuPont Cornsensus /clone_lib="Maize Mapping Project/DuPont Cornsensus /clone="this sequence is part of a project of EST /note="this sequence is part of a project of EST assemblies resulting from the application of public contigs to seed DuPont contigs; this resource was assembled by DuPont as part of a collaboration for the overgo addressing of BACs in conjunction with the Maize Mapping Project"	www.tigr.org; or NCBI, www.ncbi. maize cDNA sequences is either v schnable, Iowa State, then clone www.zmdb.lastate.edu. Location/Qualifiers 1. 1961 // Organiam="Zea mays"	•	Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea. I (bases 1 to 1961) E 1 (bases 1 to 1961) S Hainey, C. F., Dolan, M., Miao, G.H., Vogel, J.M., Whitsitt, M.S., Arthur, L.W., Hanafey, M., Morgante, M. and Tingey, S.V. Maize Mapping Project/DuPont Consensus Sequences for Design of Overgo Probes L Unpublished (2002)	M 40N	2074 TGCCGCTGTGTTTCATAACGCAAGGACACAAGGTTCTGTGACGGGACGCGCTTTGGGCTAGG 2133 2093 TGCTGAGGTTGGCATAAGCACAAGGGCTATCCATGCCCGTGGACCAGTGGGGTGTTGAAGG 2152 2194 TGCAGAGGTTGGCATAAGAAGACTCTTGCGATGACACAAGGACCAGTGGGTGTTGAAGG 2193 2153 TCTCTTAACTACACGATGGATCTTTGCGAGGACGTTGGGACAAGGA 2212 2164 ACTTCTAACTACTCCCTTGCATTTAACTACGCGCAAATGATGGTGAAATGGTGACAAGGA 2213 2174 TGCAGAGGATGATGATTTTACGCGGTAGTGGACAAGGA 2212 2194 ACTTCTAACTACTACTCCTTTAAGAGTCTTTACGCGGTAATGGTGAAATGGTGACAAGGG 2253 2213 TGTCGTGACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTT 2266 2214 AGTGGTTTACACCCATAAGAGTCTTCCTTTGCAATGAGGCAAAGAACCTCTGTT 2307
	······································					· .
8 8 8 8 8	25	A A A	4	5 8 8 8 8	2 2 2 2	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
1667 TGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCCTG 1726	1487 ACTTATTGGCCTTGTTACAACTAGAGATGAGATGGCAGATTTGCTAAAGCTTGATGATGT 1546	136 ATCHTIGGAATICGAAGIGGTAATGACTCTCCTCAAAAGGTGGAAAAGAAGCATCACTACAGAGTAGTAGTACTCAAAAGAAGCATCAAAAGAAGCATCAAAAGAAGCATCAAAAGAAGCATGAAGAAGAAGAAGCATGAG 781 722 GTCTTTAGCAGTTCGAAGTGGCAATAGTCCTCCTCAAAAGAAAG	CAACCAGATACTCAAAAGAACAGAGGTTGCTGAAGACTTAGTGCTCGNNNNNCATCTTG CCCATTAGGTGTTCTTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGC	NUNUNUNUNUNUNUNUNUNUNGGATATCTAGAAATCTTTTGGTTGATAGAATTGACATTGAAGCC AGGAAAAGATAGCAAGACCTTGCAAAATCTTTTGGTTGATAGAATTGACATTGAAGCC AGGAAAAGATAGCCAAGCCTTGCAAAATCTTTTTTTTTT	1007 AGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGA 1066	767 GCAAGAATCACTTTTGGAGACAAATCTCCTGTGTAGGTAG

```
SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 3
AY105865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAI
                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                       Direct Submission
Submitted (25-APR-2002) Maize Mapping Project, University of Submitted (25-APR-2002) Maize Mapping Project, University of Missouri, Columbia, MO 65211, USA

If you are interested in getting corresponding physical clones, these are publicly available from ZmDB and may be found by BLAST searching at MSL, maizemap.org; ZmDB, www.rzmdb.iastate.edu; TIGR, www.tigr.org; or NCBI, www.ncbi.nlm.nih.gov. When the source of the maize CDNA sequences is either Virginia Walbot, Stanford or Pat maize CDNA sequences is either Virginia Walbot, Stanford or Pat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zea mays PCO085448 mRNA sequence.
AY105865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Maize Mapping Project/DuPont Consensus Sequences for Design of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hainey, C.F., Dolan, M., Miao, G.H., Vogel, J.M., Whitsitt, M.S., Arthur, L.W., Hanafey, M., Morgante, M. and Tingey, S.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AY105865.1 GI:21208943
                                                                                                                                                                                                                                                                                                                                    www.zmdb.iastate.edu
                                                                                                                                                                                                                                                                                                                                                        Schnable, Iowa State, then clones may be requested from ZmDB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Coe, E.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAGAATGTTGCATACACCCATAAGAACCTTCCCTTACAATGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAATGAGGT 2252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGAAGGTCTCTTAACAACACGCTGGATCATGCGAGGAAGTGGGCAAGTGGTGAATTGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTGGGTGCCGAGGTTGGCATAAGCACAGGGCGTATACATGCTCGCGGGCCTGTGGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGATAGTGCTGCTGTATTTCATAATGCGAGTACACGATTCTCTGATGGGGGCTCGTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATTGAGTTCGTTGATGATGTACAGTCAGCAATTAACCATATACATCGTTATGGAAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTACTGTGTATTCCGAAAGCAGATTCATTCCATCATGAATATAGCTCTATGGCCTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGGCTCGTTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCTCTGGGATTTCCAAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATGGCCTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 1685)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (bases 1 to 1685)
/note="this sequence is part of a project of EST assemblies resulting from the application of public contigs of seed Dubont contigs; this resource was assembled by DuPont as part of a collaboration for the overgo addressing of BACs in conjunction with the Maize Mapping Project"
                                                                                                                                                Library
                                                                                                                                                                                      /mol_type="mRNA"
/db_xref="MaizeDB:634799"
/db_xref="taxon:4577"
                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                              organism="Zea mays"
                                                                                                                                                                       lib="Maize Mapping Project/DuPont Cornsensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1685 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TURNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HTC 16-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             윰
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              占
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
            밁
                                               Ş
                                                                                                   밁
                                                                                                                                           S
                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 1080;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                                                                                                                                                                                                                                                                                                                                       1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1026 CAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGATGTTGCAGATGCTTTGGAG 1085
                                                      1866 GCTGTTTCATTTCATCATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTGATGAT 1925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                              CATGCTGATGGTATATGCCACGTATATATTGACAAATCAGCTGACATGGATATGGCAAAA 1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTGTTACA 1505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCATTAGGTGTTCTCTTA 1325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAGTTGCT 1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTCTTCATGGGGAAAAATTGGTACTCTCTTTCACAAGAATGCGAATTTGTGGGAATCA
                                                                                                                                                ACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTCTGGGATTTCCAAAA 1865
                                                                                                                                                                                                                                                                                                                                       CTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCCTGCAATGCAATGGAGACCTTA 1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTCGAAGT 1385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ССАДАЛІСТАТІССТАСССТІССАЛАТАТССАЛАСАСССТАТАЛАССАСАТАСТТАЛАЛА 1265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTTATGAAAAGTCGTTGGTTGCTAGGATGACCCTAAAGCCAGGAAAGATAACAAATCTT 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGATATGAGAAGCCTTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAAGCCTT 1205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAAATGAGGATGCAATTATGTCTGAAAATGATGCCGATGTTGAGGCAGCACAAGTTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGCATCTA 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTCTCAAAGGCGAAAAGATCGGTACACTTTTCCACAACGAAGCAAATTTGTGGGCATGT
       GTAGACTCATTTCGTCATGAGTATAGCTCAATGGCATGCACAGTCGAATTTGTTGATGAT 1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTCTTGGG .1625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTTGTCACTCCA. 1565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGTCATAACTGGAGTTATTCCCGATACTGTTGGCAAAAAAGCTCATAGGCCTTGTGACT 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGTAATGGTCTCCTTTTGAAAGGAGGGAAAGAAGTTATGAGATCAAATGCAATATTACAC 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACGATATTGCAT 1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTATTTTTGAGTCTCGTCCTGATGCATTGGTCCAGATTGCATCTCTAGCGATCCGAAGT 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAAGATCCATTCGTAAAACTGCTGACATGGAGGACCCTATTTCCCATACATTGAAAAGA 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCAAGGAAGCTACAGCCCGAGAGATGGCAGTTGCGGCAAGAGACTGTTCGAGGCGTCTA 130
                                                                                                   AAGGAAGGAGTAGTTATTTATGGTGGACCTGTTGCACATGACAAGTTGAAAGTACCAAAG
                                                                                                                                                                                                CTTGTTCATAAAGATCTTAACAAGAGTGAGGGACTTGATGATCTATTAGTGGAACTTGAA
                                                                                                                                                                                                                                          CTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCACTAAAA 1805
                                                                                                                                                                                                                                                                                          CGGATAGTATTGGATGCTAAGATTGATTATCCAGCAGCATGTAATGCAATGGAAACACTA
                                                                                                                                                                                                                                                                                                                                                                                    CATGCTGATGGTATCTGCCATGTTTACATTGACAAATCAGCCGACATGGATATGGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAGGTAGTAAGTCTCTAGTTTCCCCAAATCAAAGCAACAACTAAGATTCCAGTTTTAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCAAAGAGGAAATTGCTGATCTACTAGCGCTTGATGATGTAATTGATCTTGTCATTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACAGAGGTTGCTAAAGATCTGGTTTTTGAGAAAGCATATTGCCCATTGGGTGTTCTTCTC 430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATCAGAGGAACGCAAACAGATTTTGCTAGATATTGCTGATGCTCTGGAA 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            35.0%;
77.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 891.6; DB 11;
Pred. No. 7.8e-220;
0; Mismatches 314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70
                                                                                                                                                                                                                                                                                                 850
                                                                                                                                                                                                                                                                                                                                                                                           790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 670
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 4
CD893850
                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                           Matches 657;
                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                         source
                                                                              Local Similarity
                     563 AAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGA 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CD893850 787 bp mRNA linear EST 14-UUL-2003 G118.124L04F010828 G118 Triticum aestivum cDNA clone G118124L04, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genoplante, a major partnership french program in plant genomics Unpublished (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genoplante.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae; Triticum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Triticum aestivum (bread wheat)
Triticum aestivum
                                                                                                                                                                                                                                                                                                                                                                                                                    93, rue Henri Rochefort 91025 EVRY CEDEX France
Tel: 33 1 69 47 54 00
Fax: 33 1 69 47 54 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Genoplante
                                                                                                                                                                                                                                                                                                                                                                                                 This sequence has been generated in the framework of the french
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CD893850.1 GI:32664761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACTCCCCTTTTA 1404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAATATCCTTTTAA 2299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAACTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATAATGCAAGCACAAGGTTTTGTGATGGGACGCGTTTTTGGGCTAGGTGCTGAGGTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATAATGCAAGTACGAGATTCTCTGATGGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAACTGATAGAAGTGCTGCAGAGGCCTTTCTGCAGCAAGTTGATAGTGCCGCTGTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGATTGTATCGTC 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACAAGGATCTTCCTTTGCAATGAGGCAAATAACCTCCGTTGTGGTCGTAACGAATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTTTAGCCTGTTCAGGAGTAGGT 2285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTGACAAGGATGTCGTGTACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATAAGTACAGAGCGCATACATGCCCGCGGACCTGTTGGAGTTGATGGACTTCTAACTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTGTATTT 2045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGCTGCATTTTGCGCGGTAGTGGACAAGTGGTGAATGGTGACAAGGGAGTGGTTTACACC
nt genomics programme 'Genoplante' (ht
http://genoplante-info.infobiogen.fr)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 787)
                                                           Conservative
                                                                                                                                                      /tissue_type="grain (118 degrees per day after
pollination)"
/clone_lib="G118"
                                                                                                                                                                                                                   /db_xref="taxon:4565"
/clone="G118124L04"
                                                                                                                                                                                                                                                            /mol_type="mRNA"
/cultivar="recital"
                                                                                                                                                                                                                                                                                                  organism="Triticum aestivum"
                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                          22.6%;
                                                           0; Mismatches 118;
                                                                              Score 575.2; DB 14; Pred. No. 8.1e-138;
                                                                                                                                                                                                                                                                                                                                                                              (http://www.genoplante.com
                                                           Indels
                                                                                               Length 787;
                                                           ۲.
                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1090
                                                           ۲.
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
CD869253
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1283 TTTAGTTCTTGAGAAAACATCTTGCCCATT-AGGTGTTCTCTTAATTGTTTTTGAG 1337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1223 CCTTGCAAATATGGAAGACCCTATAAACCAGATACTTAAAAAGACAGAGGGTTGCTGATGA 1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 192 TACTTATATCAAGGAAAAACATTATCATGAAATTACTTTTGGAGACAAGTCCCGTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          743 CACTTATATAAAGAAAAGCATCAGCAAGAAATCACTTTTGGAGACAAATCTCGTGTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        132 TAGTGATGTGGATGGCCTCTACAGCGGTCCACCAAGTGAACCTTCATCAAAGTTAATACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             683 CAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAAATCATACA 742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  623 TAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCT 682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12 AAATGATGCCATCAGTACGAGGAAGGCTCCATACGAGGATTCATCTGGTATATTCTGGGA 71
93, rue Henri Rochefort
Tel: 33 1 69 47 54 00
Fax: 33 1 69 47 54 10
                                                                                                                                                                                          Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticum.
                                                                                                                                                                                                                                                                                                                                                                                          CD869253 698 bp AZO2.111C08F001124 AZO2 Triticum
                                                                Genoplante
                                                                                    Contact: Genoplante
                                                                                                         Genoplante, a major partnership french program in plant genomics Unpublished (2003)
                                                                                                                                                                                                                                                            Triticum aestivum
                                                                                                                                                                                                                                                                                                                               CD869253.1 GI:32553069
                                                                                                                                                                                                                                                                                                                                                                      mRNA sequence
                                                                                                                                                                                                                                                                                   Triticum aestivum (bread wheat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTTTCTAGATTGACTCTGAAACCAGGAAAGATAGCAAGCCTTGCCAAATCTGTTCGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAACGAAAAAAGATATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAAT 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCGTGAAATGGCTGTTGCTGCACGGGATTGTTCAAGGCGTCTACAGAATTTGACATCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTTGTCATCAGA 1042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATTGGTACTCTTTTTCATAAAAATGCAAGTTTGTGGGAACCATCCAAGGACACCAGTGT 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTTGCGAATATGGAAGACCCTATTAACGAGATACTGAAAAGGACAGAGGTTGCTGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TÄGÄTCCGÄGÄÄTGÄÄGCAGÄTTTÄĞCAGCAGCACATGAGGCTGGGTÄTGAGAGTGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTAGTTCTTGAGAAAACATCTTGCCCCCTTGGGGTGTTCTATTGATTATATTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATTGGTACTCTCTTTCACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTAC 982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTTGTTATTACAAGTGGATGTGCATCTCAGAGCCTTGTTAAAGTTCTCCGTGGGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTGGTTATTACAAGTGGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAGAGGAGGCATGACAGCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAATGÁCAGTTTGGCÁGGTCTACTGGCATTGGAAAGCTGATCTCCCTTGTTCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAGCGCAAGAAAATATTAGTAGATGTTGCGGATGCTTTAGAGGCAAATGAGGATTTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGAGGTGGCATGACAGCTAAAGTCCAAGCTGCTGTGTGGGGCTTCAACGGGTGGTGTACC
                                                                                                                                                                         (bases 1 to 698)
                                                91025 EVRY CEDEX France
                                                                                                                                                                                                                                                                                                                                                                                               aestivum cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA
                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                               EST 11-JUL-2003
e AZO2111C08,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          802
```

```
S
                                                                        RESULT 6
AU094664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                       ş
                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
ACCESSION
                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                        Ď,
                                     DEFINITION
                                                        Locus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 614;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1367
                                                                                                                                                                                           1787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1127
                                                                                                                                                                                                                                                                      1727
                                                                                                                                                                                                                                                                                                                                                                                                                              1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1247 AAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAAACATCTTG 1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This sequence has been generated in the framework of the french plant genomics programme 'Genoplante' (http://www.genoplante.com and http://genoplante-info.infobiogen.fr).
            AU094664 Rice panicle (longer than 10cm) Oryza sativa (japonica cultivar-group) cDNA clone E20409, mRNA sequence.
  AU094664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACC 1186
                                                                                                                                                                                                                                                                                                                                                                                                                              TAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAATCAGC 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CATTGATCTTGTCATTCCAAGAGGGAGTAATAAGCTTGTTGCTCAAATCAAATCATCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTGATTGGCCTTATTACAACTAGAGATGAAATTGCGGATTTGCTAAAGCATGATGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGT 1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAA 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCTTTAGCCATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCAATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAG 1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCTTTGGGTGTTCTATTGATTATTTGAGTCCCGACCTGATGCCTTAGTCCAGATTGC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCATTAGGTGTTCTTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGC 1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAACTAGATACTGAAAAGGACAGAGGTTGCTGATGGTTTAGTTCTTGAGAAAACATCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGAAAGATAGCAAGCCTTGCCAAATCTGTTCGCACTCTTGCGAATATGGAAGACCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCAGCACACATGAGGCTGGGTATGAGAGTGCTTTGGTTTCTAGATTGACTCTGAAAACC
                                                                                                                                                     CATACTAGTAGCACTCAAGACAGCAGGAGTTAATCTTT
                                                                                                                                                                                           CATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTT 1824
                                                                                                                                                                                                                                                                                                             AGACATGGATATGGCAAAACGTATTGTGATGGATGCAAAAATTGATTACCCAGCTGCCTG 600
                                                                                                                                                                                                                                                                                                                                                   TGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCCTG 1726
                                                                                                                                                                                                                                                                                                                                                                                          AAAGATTCCTGTTCTTGGCCATGCTGATGGTGTTTGTCATGTATATATTGACAAATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATCAAACGCAATATTGCATAAGGTTATAACCAATGCTATTCCTAACAATGTTGGCGAAAA
                                                                                                                                                                                                                                  CAACGCAATGGAGACGTTGCTTGTTCATAAAGATCTTATGAAGACTCCAGAACTTAATGA
                                                                                                                                                                                                                                                                      CAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGA 1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:4565"
/clone="AZO2111C08"
/tissue_type="root"
/clone_lib="AZO2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Triticum aestivum"
/mol_type="mRNA"
/cultivar="recital"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        22.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 563.6; DB 14; Pred. No. 7.9e-135;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     84; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 698;
                                                          EST 03-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                  660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6
0
                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                  Ş
```

```
S
                                                                                                                                                                                                                                                                                                                                                                                   멂
                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                      밁
                                                                             S
                                                                                                                             밁
                                                                                                                                                               Ś
                                                                                                                                                                                                               뮍
                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                              닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Sin Matches 612;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                   2274 TCAGGAGTAGGTGAATATCCTTTTAAGAATGGATTGACTTCTATTTTGTCATCTTGTA 2333
                                                                                                                                                                                                                                                                                                                                                                                                                              2154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1917 GTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGG-AAGTGCTCATACAGA 1975
2454 AUGTAATAAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGCTTGTAAT 2513
                                                                                                                                                        2334 CAAGCATCTTATTGCGGCATTCCGATGGATTATTGATTTTGGGGGTTCCCACTTTCAAAT 2393
                                                                                                                                                                                                                                                                                                                                          2214 GTCGTGTACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTTAGCCTGT 2273
                                                                                 2394 GTGACACCAAAAATAAATTCATCAGTTCTGAGAGCAAGATTTTGGAGGTTCAGCTTCTCC 2453
                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota, Viridiplantae, Streptophyta, Embryophyta; Tracheophyta;
Spermatophyta, Magnollophyta, Liliopsida, Poales, Poaceae;
Ehrhattoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (2000)
Contact: Takuji Sasaki
National Institute of Agrobiological Resources
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  305-8602, Japan
Tel: 81-298-38-7441
Fax: 81-298-38-7468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sasaki, T. and Yamamoto, K.
Rice cDNA from panicle (longer than 10cm) (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AU094664.1 GI:8857346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rice Genome Research Program, Kannondai 2-1-2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCCTCGTTTTGGATTGGGT 2093
                                                                                                                                                                                                                                                                                                                                                                                                                CTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCCAAGTGGTGAATGGTGACAAGGAT 2213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGT 2153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGTATCCGNCACTACCAGATGATAAGGTAGCAGAGACTTTTC-ACGCAGAGTTGATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTGATGATGTCCAATCCGCCATTGCCCATATTCACCGTTATGGAAAGTGCCCCATACAGA 60
                                                                                                                             CAAGCATCTTATTGCCGCCATTCCGATGGATTATTGATTTTGCGGGG-TCCCACTTTCAAAT
                                                                                                                                                                                                                                                                                                                                                                                       ĊŢĊŢŢĀĄĊŢĀĊĄĊĠĀŢĠĠĀŢĊŢŢĠĊĠĀĠĠĠĊNŢĠĠĠĊĀĀĠŢĠĠŦĠĀĀŢĠĠŢĠĀĊŖĀĠĠĀŢ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGCTGTATTTCATAATGCAAGTCCCAGATTCTCTGATGGGNCTCGTTTTGGATTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TIGIATCGTCACIA--CAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGT 2033
                                        GTGACACCAÑÑAATAAATTCATCAGTTCTGAGAGCAAGATTTTGGAGGTTCAGCTTCTCC
                                                                                                                                                                                                               TCAGGAGTAGGTGAATANCCTTTTAAGAATGGATTGACTACTTTATTTTGTCATCTTGTA
                                                                                                                                                                                                                                                                                                   GTCGTGTACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTTAGCCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTNTTGAAGGT 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                tsasaki@abr.affrc.go.jp,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Oryza sativa
/mol_type="mRNA"
/cultivar="Nipponbare"
/db_xref="taxon:39947"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="panicle"
/dev_stage="panicle (longer than 10cm)"
/clone_lib="Rice panicle (longer than 10cm)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone="E20409"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 558.6; DB 9;
Pred. No. 1.6e-133;
0; Mismatches 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             URL:http://rgp.dna.affrc.go.jp/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (japonica cultivar-group)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 689;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tsukuba,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        υi
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ibaraki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                179
                                               538
                                                                                                                                    478
                                                                                                                                                                                                                   419
                                                                                                                                                                                                                                                                                                       359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.
```

```
JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 7
CD869839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
AUTHORS
                                                                                                        Ś
                                                                                                                                                    片
                                                                                                                                                                                    S
                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                  밁
                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 608;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                         1644 CACGTATATATTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCA 1703
                                                                                                                                                                                               1524
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1284 TTAGTTCTTGAGAAAACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGA 1343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2514 GAGCGATACTAACATCTGTGATTGCACATATACTAA 2549
                                                                                                                                                                                                                                                                                   1464 ATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCA 1523
                                                                                                                                                                                                                                                                                                                                                                     1404 AAAGGTGGAAAAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCT 1463
                                                                                                                                                                                                                                                                                                                            121 AAAGGTGGAAAAGAAGCAATGAGATCAAACGCAATATTGCATAAGGTTATAACCAATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This sequence has been generated in the framework of the french plant genomics programme 'Genoplante' (http://www.genoplante.com and http://genoplante-info.infobiogen.fr).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genoplante, a major partnership french program in plant Unpublished (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae; Triticum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Triticum aestivum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AZO2.112M10F001124 AZO2 Triticum aestivum cDNA clone AZO2112M10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93, rue Henri Rochefort 91025 EVRY CEDEX France
Tel: 33 1 69 47 54 00
Fax: 33 1 69 47 54 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Genoplante
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Genoplante.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CD869839.1 GI:32553655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Triticum aestivum (bread wheat)
                                                                    GTTGCTCAAATCAAATCATCAACAAAAGATTCCTGTTCTTGGCCATGCTGATGGTGTTTGT 360
                                                                                                           GTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGC 1643
                                                                                                                                                                                             GATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTT 1583
                                                                                                                                                                                                                                                                                                                                                                                                              CCTGATGCCTTAGTCCAGATTGCGTCTTTAGCCATTCGAAGTGGTAATGGTCTTCTCCTA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTA 1403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGCGATACTAACATCTGTGATTGCACATATACTAA 634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGTAATAAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGCTTGTAAT 598
                                                                                                                                                      GATTTGCTAAAGCATGATGATGTCATTGATCTTGTCATTCCAAGAGGGGAGTAATAAGCTT
(bases 1 to 693)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="root"
/clone_lib="AZO2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="taxon:4565"
/clone="AZO2112M10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Triticum aestivum"
/mol_type="mRNA"
/cultivar="recital"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21.9%;
87.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches 85;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 557;
Pred. No. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       693 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.1e-133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 14; Length 693;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (http://www.genoplante.com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST 11-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ..
..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                        300
                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                          240
```

```
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     먾
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CA498255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1944 CATATTCATCGTTATGGAAGTGCTCATACAGAT 1976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1764 ATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1704 AAAACTGATTACCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTT 1763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CA498255 714 bp mRNA linear EST 14-NV WHE3241 A09 A17ZT Wheat melotic anther cDNA library Triticum aestivum cDNA clone WHE3241 A09 A17, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: oandersnepw.usda.gov
Sequences have been trimmed to remove vector sequence and low
quality sequence with phred score less than 20
Seq primer: T7 primer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Priticeae; Triticum.

1 (bases 1 to 714)

1 (bases 1 to 714)

1 Adderson, O.D., Chao, S., Crossman, C., Langridge, P., Lazo, G.R., Pham, J., Rausch, C.J., Sutton, T., Woo, J. and Wilson, C.

The structure and function of the expressed portion of the wheat genomes - Meiotic anther cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Triticum aestivum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    800 Buchanan Street, Albany, CA 94710, USA
Tel: 5105595773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US Department of Agriculture, Agriculture Research
West Area, Western Regional Research Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Olin Anderson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CA498255.1 GI:24989202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Triticum aestivum (bread wheat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATATACATCGCTATGGAAGTGCACATACAGAT 693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGAC 1943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATTGCGGGCCTGTTGCGCATAAAGTATTGGGCTACCCAAAAGCAGATTCATTACATCTG 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAATTGATTACCCAGCTGCCTGCAACGCAATGGAGACGTTGCTTGTTCATAAAGATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGTACAGTTCTATGGCTTGCACTGTTGAGATAGTTGATGATGTACAATCAGCAATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAAGACTCCAGAACTTAATGACATACTAGTAGCACTCAAGACAGCAGGAGTTAATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5105595818
/clone libe-wheat meiotic anther cDNA library"
/clone libe-wheat meiotic anther cDNA library"
/note-"Vector: pspORT1; Site 1: Sal1; Site 2: Not1; Plants
were grown in a glasshouse. Anther meiotic stage was
determined by removing anthers from individual primary
florets. One anther was sacrificed for microscopic
staging, and if determined to be between (and including)
meiotic stages pre-meiosis and metaphase 1, the remaining
two anthers were collected and pooled for library
construction. The tissue, total RNA, and poly(A) RNA were
prepared, CDNA synthesised, and directionally ligated into
pspORT1 by Tim Sutton in the P Langridge Lab at the
                                                                                                                                                                                                                                                                                                                    /cultivar="Chinese Spring"
/db xref="taxon:4565"
/clone="WHE3241_A09_A17"
/tissue_type="Anther"
/dev_stage="Meiotic stages pre-meiosis-metaphase
/lab_host="E.coli_DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   organism="Triticum aestivum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Service, Pacific
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EST 14-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
```

Ś 멍 Ş

1662

131

₽ S

Matches 612;

Local

S 밁

1722

191

1782

1842

1902

311

371

1962

431

```
1542 GATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCG 1601
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota, Viridiplantae, Streptophyta, Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
                                                                                                                                                                                                                                                                                        CA7544084 EST 27-NOV-2002

BR040010000 PLATE D06 44 048.ab1 OA Oryza sativa (japonica cultivar-group) cDNA Clone BR040010000 PLATE D06 44 048.ab1 similar cultivar-group) cDNA Clone BR040010000 PLATE D06 44 048.ab1 similar cultivar-group) cDNA Clone BR040010000 PLATE D06 44 048.ab1 similar cultivar-group control contr
                                                                                                                                                                                            CA754084.1 GI:25798187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTGACAAGGATGTCGTGTACACCCCATAAGAGTCTTCCCTTTGCA 2245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGTTGATAGTGCTGCCGTATTATACAACGCGAGTACAAGATTCTCTGATGGTGCTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTGCACATACAGACTGTGTGGTCACTACAGATGATAAAGTAGCAGAGACCTTTCTACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGC 2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCACAGTTGAGATAGTTGATGATGTACAATCAGCAATTGACCATATACATCGCTATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCACTGTTGAGTTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATAAAGTATTGGGCTACCCGAAAGCAGATTCATTACATCTGGAGTACAGTTCTATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATGACATACTAGTAGCACTCAAGACAGCAGGAGTTAATCTTTATTGCGGGCCTGTTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCTGCAACGCAATGGAGACGTTGCTTGTTCATAAAGATCTTATGAAGATTCCAGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCA 1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAA 1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATGTCATTGATCTTGTCATTCCAAGAGGGGAGTAATAAGCTTGTTGCTCAAATCAAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTGACAAGGATGTTGAATACACCCATAAGAGTCTTCCTTTGCA 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCAACAAAGATTCCTGTTCTTGGCCATGCTGATGGTGTTTGTCATGTATATATTGACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTGTTGAAGGTCTTTTAACTACACGATGGCTCTTACGAGGGAAAGGGCAAGTGGTGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTGGACTCGGTGCTGAGGTTGGCATAAGTACAGGCCGTATACATGCACGTGGACCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                            sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Department of Plant Science, University of Adelaide, Waite Campus, Australia. Average insert size 1.5Kb. Plasmid DNA preparations and DNA sequencing were performed in the OD Anderson lab (all other authors)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21.8%;
86.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 556.8; DB 14; Length 714; Pred. No. 4.6e-133; O; Mismatches 92; Indels O;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
    RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
AUTHORS
                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 568;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local
                                                                                                                                                                                                                                                                                                                                                                                    2458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1978 GTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTG 2037
                                                                                                                                                                                                                                2518 GATACTAACATCTGTGATTGCACATATACTAA 2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 620)
Bohnert,H.J., Borchert,C., Brazille,S., Brooks,J., Eaton,M., Ferrea,H., Kawasaki,S., McCollough,A., Michalowski,C.B., Palacio,C., Scara,G., Wheeler,M. and Zepeda,G.R. Functional Genomics of Plant Stress Tolerance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Department of Plant Biology University of Illinois
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: Mark Fredricksen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1201 W. Gregory Dr., Urbana, IL 61801,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACCAAAAATAAATTCATCAGTTCTGAGAGCAAGATTTTGGAGGTTCAGCTTCTCCATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTG 2097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATCTTATTGCGGCATTCCGATGGATTTGATTTTGGGGGGTTCCCCACTTTCAAAIGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTGACAAGGATGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTG
                                                                                                                                                        GATACTAACATCTGTGATTGCACATATACTAA 571
                                                                                                                                                                                                                                                                                                                                                                            AATAAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGCTTGTAATGAGC 2517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATCTTATTGCGGCATTCCGATGGATTATTGATTTTGGGGGG-TCCCACTTTCAAATGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGTAGGTGAATATCCTTTTAAGAATGGATTGACTACTTTATTTTGTCATCTTGTACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGTAGGTGAATATCCTTTTTAAGAATGGATTGACTACTTTATTTTGTCATCTTGTACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTTAGCCTGTTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAACTACACGATGGATCTTGCGAGGGCGTGGGCAAGTGGTGAATGGTGACAAGGATGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCT 2157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTTAGCCTGTTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2172655473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            bohnertlab@life.uiuc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Oryza sativa (japonica cultiva:
/mol type="mRNA"
/mol type="mRNA"
/cultivar="Nipponbare"
/db xref="taxon:39947"
/clone="BR040010000 PLATE_D06_44_048.abl"
/tissue_type="roots"
/dev stage="3-4 weeks"
/clone_lib="OA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'note="19 h 200mM NaCl"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   21.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 555.2; DB 14
Pred. No. 1.1e-132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (japonica cultivar-group)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
```

Indels Length 620;

٠,

Gaps

120

60

2217 180

240

RESULT 9 CA754084

В Ś 밁

671

LOCUS DEFINITION

KEYWORDS

ORGANISM

VERSION

Ş 밁 Ş В Ş 망 Ś 밁 5 당 Ś 밁

2082

551

491

Ş 밁

2142

611

2397

360 2337 300 2277

419

2457

539

```
S
                                                                                                        밁
                                                                                                                                                            Ś
                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local
                                                                                                                                                            1437 ATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGC 1496
                                                                                                                                                                                                                                                                                 1377 ATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGATATCAGATCAAACACG 1436
                                                                                                                                                                                                                                                                                                                                                                                               1317 GTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCA 1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                             601;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pooldeae; Triticeae; Triticum.

1 (bases 1 to 699)

Anderson,O.D., Chao,S., Crossman,C., Langridge,P., Lazo,G.R., Pham,J., Rausch,C.J., Sutton,T., Woo,J. and Wilson,C.

The structure and function of the expressed portion of the wheat genomes - Meiotic anther cDNA library
Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CA501661 69 bp mRNA linear WHE4037_B08_C15ZT Wheat meiotic anther cDNA library aesticum cDNA clone WHE4037_B08_C15, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                quality sequence with phred score less than 20 Seq primer: T7 primer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Olin Anderson
US Department of Agriculture, Agriculture Research Service, Pacific
West Area, Western Regional Research Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Triticum aestivum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CA501661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequences have been trimmed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: oandersn@pw.usda.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Triticum aestivum (bread wheat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CA501661.1 GI:24992621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
CTTATTACAACTAGAGATGAAATTGCGGATTTGCTAAAGCATGATGATGTCATTGATCTT 251
                                                                                                              ÁTATTGCATÁAGGTTÁTAACCAATGCTÁTTCCTGACÁATGTTGGCGAAAAATTGATTGGC 191
                                                                                                                                                                                                                          ATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCAATGAGATCAAACGCA 131
                                                                                                                                                                                                                                                                                                                                           GTTCTATTGATTATTTTTGAGTCCCGACCTGATGCCTTAGTCCAGATTGCGTCTTTAGCC 71
                                              CTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTT 1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Buchanan Street, Albany, CA 94710, USA : 5105595773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5105595818
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              florets. One anther was sacrificed for microscopic staging, and if determined to be between (and including) meiotic stages pre-meiosis and metaphase I, the remaining two anthers were collected and pooled for library construction. The tissue, total RNA, and poly(A) RNA were prepared, cDNA synthesised, and directionally ligated into pSPORTI by Tim Sutton in the P Langridge Lab at the Department of Plant Science, University of Adelaide, Waite Campus, Australia. Average insert size 1.5KD. Plasmid DNA preparations and DNA sequencing were performed in the OD Anderson lab (all other authors)."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone lib="Wheat melotic anther cDNA library"
/note="Vector: pSPORTI; Site_1: SalI; Site_2: wors were grown in a glasshouse. Anther melotic stage was determined by removing anthers from individual primary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /cultivar="Chinese Spring"
/db xref="taxon:4565"
/clone="wH24037 B08_C15"
/tissue_type="Anther"
/dev stage="Meiotic stages pre-meiosis-metaphase I"
/lab_host="E. coli DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             organism="Triticum aestivum"/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 548.8; DB 14; Pred. No. 5.5e-131; 0; Mismatches 87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to remove vector sequence and low
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 699;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST 14-NOV-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

```
RESULT 11
CK202039
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1557 GTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCCT 1616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              672 TGTGTGGTCACTACAGATGATAAAGTAG 699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Triticum aestivum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Pooideae; Triticeae; Triticum.
                                                                                                                        Email: fgas_ests@cs.usask.ca
This sequence is the direct result of the Base calling software
phred (default parameters). It is the raw base calls. To aid in the
identification of the high quality insert the software Lucy
(default parameters) has been run on this sequence. Lucy identified
the region [104,772].

Plate: L3C114 row: P. column: 11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Allard, F., Crosby, W.L., Danyluk, J., Eudes, F., Frick, M., Gaudet, I
Genswein, B., Graf, R., Gulick, P., Hrycan, L.D., Laroche, A.,
Linke, M.G., McCarthy, E.L., Monroy, A., Muzak, I., Nilson, D.,
Penniket, C., Roach, J.L. and Sarhan, F.
Functional Genomics of Abiotic Stress In Wheat and Canola Crops
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CK202039 821 bp mRNA linear EST 08-DEC-2003 FGAS010560 Triticum aestivum FGAS: Library 3 Gate 6 Triticum
                                                                                                                                                                                                                                                                                               1C101 Engineering Building, 57
Saskatchewan, S7N 5A9, Canada
Tel: 306 966 1769
Fax: 306 966 2033
                                                                                                                                                                                                                                                                                                                                                                    Bioinformatics
University of Saskatchewan, Department of Computer Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (2003)
Contact: Wm L Crosby
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CK202039.1 GI:39564429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            aestivum cDNA, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Triticum aestivum (bread wheat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGACGTTGCTTCATAAAGATCTTATGAAGACTCCAGAACTCAATGACATACTAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCCTGCAATGCAATG 1736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAATCAGCTGACATGGAT 1676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCATTCCAAGAGGGAGTAATAAGCTTGTTGCTCAAATCAAATCATCAACAAAGATTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTGATGATGTACAATCAGCAATTGACCATATACATCGCTATGGAAGTGCACATACAGAC 671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGAT 1976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTCCAAAAGCTGTTTCATTCATCATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTT 1916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCACTCAAGACAGCAGGAGTTAATCTTTATTGTGGGCCTGTTGCGCATAAAGTATTGGGC 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTCTGGGA 1856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTA 1796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTATCGTCACTACAGATGATAAGGTAG 2004
/organism="Triticum aestivum"
/mol_type="mRNA"
/db_xref="taxon:4565"
                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaudet, D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 371
```

```
ACCESSION
                                                                             DEFINITION
                                                                                                                                                                                           RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 611;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1775 AGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACC 1834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1595 CAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATAT 1654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1416 GAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAAT 1475
                                                                                                                                                                                                                                                                                                                                                                                       2075 GGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTA 2121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1835 TATTGCGCACAAAGCTCTGGGATTTCCAAAAGCTGTTTCATTTCATCATGAGTATAGTTC 1894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1655 TGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTA 1714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2015 TCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGG 2074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1955 TTATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTT 2014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       655 CTATGGAAGTGCACATACAGACTGTGTGGTCACTACAGATGATAAAGTAGCAGAGACCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          595 TATGGCTTGCACAGTTGAGATAGTTGATGATGTACAATCAGCAATTGACCATATACATCG
                                                                                                                                                                                                                                                                                                             775 TGCTCGTTTTGGACTCGGTGCTGAGGTTGGCATAAGTACAGGCCGTA 821
5', mRNA sequence.
CA131282
                                                                     CA131282 1052 bp mRNA linear EST 24-SEP-2003 SCBFRT1069F07.g RT1 Saccharum officinarum cDNA clone SCBFRT1069F07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTGGCGAAAAATTGATTGGCCTTATTACAACTAGAGATGAAATTGCGGATTTGCTAAAG 234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTGGTGAAAAACTTATTGGCCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAG 1535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAGCAATGAGATCAAACGCAATATTGCATAAGGTTATAACCAATGCTATTCCTGACAAT 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATGATGATGTCATTGATCTTGTCATCTCCAAGAGGGAGTAATAAGCTTGTTGCTCAAAT 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTACGTCAAGTTGATAGTGCTGCCGTATTATACAACGCGAGTACNAGATTCTCCGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATGGCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCG 1954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAACTCAATGACATACTAGTAGCACTCAAGACAGCAGGAGTTAATCTTTATTGTGGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCAGCTGCCTGCAACGCAATGGAGACGTTGCTTGTTCATAAAGATCTTATGAAGACTCC 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCC 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAATCATCAACAAAGATTCCTGTTCTTGGCCATGCTGATGGTGTTTGTCATGTATATAT 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTGATGATGTCATTGATCTTGTCA-CTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAAT 159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTTGCGCATAAAGTATTGGGCTACCCAAAAGCAGATTCATTACATCTGGAGTACAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone lib="Triticum aestivum FGAS: Library 3 Gate 6"
/note="Organ: Root; Vector: pCMV.SPORT6; Root tissue from
control, cold-acclimated and salt stressed wheat cultivar
Norstar. 7 mRNA populations were combined before
constructing the library; 7 day non-acclimated roots, 1,
23, and 53 days cold-acclimated at 4C, and 30 minutes, 3
hours and 6 hours treated roots with 200mM Nacl.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Non-acclimated and cold-acclimated plants were grown in vermiculite while salt stressed plant were grown hydroponically. First strand synthesis in this library was done in the presence of methylated dCTP thereby protecting from internal cleavage with NotI."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 543.6; DB 14; Length 821; Pred. No. 1.3e-129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   95;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              654
```

Ś

片 Ś

Ś 밁 Ś 밁 Ś 밁 5 밁 S B

CA131282

밁

Ş 맑 뮍 Ş B Ś ORIGIN

Ş 밁 Ś

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
δ
                                                     片
                                                                                                  Ś
                                                                                                                                                          片
                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 681; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1351 CCTTGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTG 1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1291 TTGAGAAAACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATG 1350
                                                                                                                                                                                                                                                                                                                        1471
                                                                                                                                                                                                                                                                                                                                                                                                                           1411 GAAAAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTC 1470
                                                                                                        1591 AAATCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTAT 1650
                                                                                                                                                                                                                                                                   195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15 TTGAGAAAACATGTTGCCCATTAGGGGTGCTATTGATCTTTTTTGAGTCCAGGCCTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: parruda@unicamp.br
Clone distribution: clone distribution information can be found
through the Brazilian Clone Collection Center (BCCC) at
http://www.bcccenter.fcav.unesp.br
plate: 069 row: F column: 07
Seq primer: T7 Promoter Primer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Vettore,A.L., da Silva,F.R., Kemper,E.L. and Arruda,P. The libraries that made SUCEST Genet. Mol. Biol. 24 (1-4), 1-7 (2001)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Universidade Estadual de Campinas
Caixa Postal 6010, 13083-970, Campinas SP, Brazil
Tel: 55 19 3788 1137
Fax: 55 19 3788 1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CA131282.1 GI:35015111
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Centro de Biologia Molecular e Engenharia Genetica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD
clade; Panicoideae; Andropogoneae; Saccharum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Saccharum officinarum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Saccharum officinarum
     ATATTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTG 1710
                                                                                                                                                                                                                TAAAGCTTGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTC 1590
                                                                                                                                                                                                                                                                GCAACGTGGGTGAAAAACTTATTGGACTTGTTACAAGTAGAGATGAAATCGCTGATTTAC 254
                                                                                                                                                                                                                                                                                                                GTAATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGC 1530
                                                                                                                                                                                                                                                                                                                                                                        GAAAACAACCCATGAGATCAAACACAGTATTGCATAAGGTTATAACTGGTGCAATTCCTA 194
                                                        AAATCAAGACATCAACTAAGATCCCTGTCCTTGGTCATGCTGATGGTATTTGCCCATGTAT 374
                                                                                                                                                             TAAAGCTTGATGATGTCATTGATCTTGTCATTCCAAGAGGCAGCAATAAGCTGGTTTCAC 314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COTTGGTCCAGAGGGCATCGTTAGCAATTCGAAGTGGCAACCCCCTTCTCCTGAAAGGTG 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note=Torgan: Root tips (0.3cm-long) from adult plants;
/ector: pSport1; Site 1: Sall; Site 2: Not1; An
unidirectional cDNA library generated from [Root tips
(0.3cm-long) from adult plants]. cDNA was prepared from
plyA+ mRNA using SuperScript Plasmid System Kit
(Invitrogen). The double-strand cDNAs were fractionated
in a sepharose CL-2B 40cm-columns and fragments sizing
between 0.8 and 1.5 Kb were directionally cloned into the
vector. Details of each source of RNA and library
construction can be obtained at
http://sucest.lad.ic.unicamp.br/public"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Arruda P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="mRNA"
/db_xref="taxon:4547"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1. .1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     organism="Saccharum officinarum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            one="SCBFRT1069F07"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21.3%;
77.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11b="RT1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches 194; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 542.6; DB 13
Pred. No. 2.7e-129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1052;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           74
```

83

```
RESULT 13
AJ432804
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                             JOURNAL COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뭕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뮍
                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
            Query Match 21.2%;
Best Local Similarity 88.0%;
Matches 589; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2130 CGTGGACCAGTGGGTGTTGAAGGTCTCTTAACTACAC 2166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2070 GATGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2010 ACTTTTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1891 GTTCTATGGCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1771 GTCCAGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1711 ATTACCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGA 1770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             435 ATTÁCCCAGCAGCCTGCAATGCTATGGAGACATTGCTTGTTCATAAAGATCTTATAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 854 TCCGGGCCCGCTGCTGCAAGCCTCTAACACTCCAC 890
                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae; Hordeum.

1 (Dases 1 to 677)

Saren,A.-M., Tanskanen,J., Paulin,L. and Schulman,A.H.

Barley EST's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AJ432804 S00011 Hordeum vulgare cDNA clone S0001100036D01F1, mRNA
                                                                                                                                                                                                                                                                                                  University of Helsinki P.O.Box 56 (Viikinkaari 6A), University
                                                                                                                                                                                                                                                                                                                                       Contact: Schulman AH
Institute of Biotechnology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hordeum vulgare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hordeum vulgare
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AJ432804.1 GI:19521256
                                                                                                                                                                                                                                                                                                                                                                               Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTAGGGCTTCGCTTTGATTGGCGGCCAGGGGGTTGCATAACCACAAGGCCGCATACTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCTTCTCTGCCCCACATGGATAGCGCTGCTGCATTT-ATAATGCCAGCACCCAACTCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATC-GTTATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACTCTATGGCCTGCACAATTGAGTTCCTTGATGATGTACCGTCAACAATTTGACATATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCCAGGTCTTGAGGACCTACTGCTATCTCTAAAACAGAAGGAGTTACTCTATTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /mol_type="mRNA"
/db xref="taxon:4513"
/clone="S000110036D01F1"
/dev stage="Developing seed"
/clone_lib="S00011"
                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                         /note="12,15,18 days after pollination"
                                                                                                                                                                                                                         organism="Hordeum vulgare"
              0; Mismatches
                                Score 541; DB 9;
Pred. No. 5.7e-129;
                                                  Length 677;
                                                                                                                                                                                                                                                                                                      of Helsinki FIN-00014
                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST 15-MAR-2002
              0
              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           674
                0
                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                 FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                             COMMENT
                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                  TITLE
                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1011 TGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGATGTT 1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1671 ATGGATATG 1679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69
            Molecular Markers Group, Department Genbank
Institute of Plant Genetics and Crop Plant Research (IPK)
Corrensstr. 3, 06466, Gatersleben, Germany
Tel: 039482-5522
                                                                                                                                                                                                                     Hordeum vulgare subsp. vulgare
Hordeum vulgare subsp. vulgare
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                           HU03E09u HU Hordeum vulgare subsp.
                                                                                                         Barley ESTs from germinating seeds Unpublished (2002)
                                                                                                                                                                                                                                                                                                                        BQ663590.1 GI:21804723
                                                                                                                                                                                                                                                                                                                                                                                                 BQ663590
Fax: 039482-5595
                                                                                         Contact: Stein Nils
                                                                                                                                                                    Zhang, H., Potokina, E., Michalek, W., Weschke, W.,
                                                                                                                                                                                                       Pooideae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAATCAGCTGAC 1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCA 1310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCT 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAAACTT 1490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TRAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCT 1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GÁGATÁCTGÁÁAAGAÁCÁGAGGTTGCTGÁTGGTTTÁGTTCTTGÁGAAAACÁTCTTGCCCT 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAAAC 1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACCAGGA 1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGGATATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATCTCGTCATTCCAAGAGGGAGCAATAAGCTTGTTGCTCAAATCAAAGCATCAACAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCCAAATCAAGGCGTCAACTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTGGCCTTATTACAACTAGAGATGAAATTGCAGATTTGCTAAAGCTTGATGATGTCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTAGCCATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCGATGAGATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAAGGTGGAAAAGAAGCTATCAGATCA 1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGGGTGTTCTATTGATTATTTTTGAGTCCCGACCTGATGCCTTGGTCCAGATTGCGTCT 368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGCACACGAGGCTGGGTATGAGAGTGCTTTGGTTGCTAGATTGACTCTGAAACCAGGA 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGATGCTTTAGAGGCAAATGAGGATTTGATTAGATCAGAAAATGAAGCAGATGTAGCA 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTTCAAGGCGTCTGCAGAATTTGTCATCAGAGGAGCGCAAGAAGATATTATTAGATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGATAGCTAGCCTTGCCAAATCTGTTCGCACTCTTGCGAATATGGAAGACCCAATTAAT
                                                                                                                                                                                      (bases
                                                                                                                                                                                                                                                                                                                                                           mRNA sequence.
                                                                                                                                                                                                         Triticeae; Hordeum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 677
                                                                                                                                                                                      to 680)
                                                                                                                                                                                                                                                                                                                                                                                                    dq 089
                                                                                                                                                                                                                                                                                                                                                                             mRNA linear EX
                                                                                                                                                                                                                                                                                                                                                                                                    EST 15-JUL-2002
                                                                                                                                                                                                                                                                                                                                                                                     HU03E09
```

428

488

1610

548 1550

809

```
Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
Ş
                                         맑
                                                                                                                               밁
                                                                                                                                                                       Ş
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1293 GAGAAAACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCC 1352
                                                                                                                                                                                                                                                                                                                                                   1653
                                                                                                                                                                         1773
                                                                                                                                                                                                                                                               1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         593;
                                                                                                                               481
                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: stein@ipk-gatersleben.de
Insert Length: 680 Std Error: 0.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
    TCTATGGCCTGCACTGTTGAGTTTGATGATGATCAATCAGCAATTGACCATATTCAT 1952
                                                                                                                                                                                                                                                                                                                                     ATTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAAACTGAT 1712
                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATAT 1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGCTTGATGATGTCATTGATCTCGTCATTCCAAGAGGGAAGCAATAAGCTTGTTGCTCAA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGCTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAA 1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTA 1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAAGAAGCGATGAGATCAAACGCAATATTGCATAAGGTCATAACCAATGCTATTCCTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGT 1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGGTCCAGATTGCGTCTTTAGCCATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TIGGTICAGATIGCAICITIGGCAATICGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGAAAACATCTTGCCCTTTGGGTGTTCTATTGATTATTTTTGAGTCCCGACCTGATGCC
                                                                                                                                                             CCAGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTTATGGTGGA 1832
                                                                                                                                                                                                                                                          TACCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGT 1772
                                                                                                                                                                                                                                                                                                                                                                                               ATCAAAGCATCAACAAAGATTCCTGTTCTTGGCCATGCTGATGGGGTTTGTCATGTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATGTTGGTGAAAAATTGATTGGCCTTATTACAACTAGAGATGAAATTGCAGATTTGCTA
                                                                                   CCAGAACTTGATGACATACTGGTAGCACTCAAAACAGCAGGAGTTAATCTTTATTGCGGG 540
                                                                                                                                                                                                                   TACCCAGCAGCCTGCAACGCAATGGAGACGTTGCTCGTTCATAAAGATCTTATGAAGACT 480
                                                                                                                                                                                                                                                                                                           ATTGACAAATCAGCAGACATGGATATGGCAAAACGTATTGTGGTGGATGCAAAAATTGAT
                                            CCCGTTGCGCGTAAAATATTGGGCTACCCGAAAGCAGATTCATTACATCTGGAGTACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     primer:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Tector: pBluescript SK+; Site 1: EcoRI (5'-end of CDNA); Site 2: KhoI (3'-end of CDNA); germinating seeds, 16-48h. Due to a cloning artefact caused by the kit, in most cases the EcoRI site is NOT present, as well as the EcoRIadapter used for cloning. To excise the insert, restriction sites upstream EcoRI should be used (e.g. BamHI, SaII.PStI). NOTE: Also due to the cloning ystem used Blue/white selection for recombinats is not 100% reliable. Average insert size is 1.2 kb"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              row: E column:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="germinating seeds"
/dev_stage="germinating seeds, 16-48
/lab_host="XL10-Gold"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        organism="Hordeum vulgare subsp. vulgare"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sub_species="vulgare"
db_xref="GABI:146078"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cultivar="barke"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            M13uni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lone="HU03E09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           _xref="taxon:112509"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       lib="HU"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 540.8; DB 13
Pred. No. 6.5e-129;
0; Mismatches 87;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 680;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1412
                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
```

```
RESULT 15
CD919380
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                    片
                                                                                                    Ś
                                                                                                                                                                        Ś
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
 닭
                          δ
                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 621;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                         1463 TATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGC 1522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1953 CGTTATGGAAGTGCTCATAC 1972
                                                                                                                                                                          1643 ССАССТАТАТАТТСАСАЛАТСАССТСАСАТССАТАТСССАЛААСТТАТТСТАЛТССАТСС 1702
                                                                                                                                                                                                                                                                                                                   132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             601
312 TATGAAGACTCCAGAACTCAATGACATACTAGTAGCACTCAAGACAGCAGGAGTTAATCT
                                                                                                                                                                                                                                                                                                                                                             12
                                                                                                                                                                                                                                                                                     72 GGATTTGCTAAAGCATGATGATGTCATTGATCTTGTCATTCCAAGAGGGAAGTAATAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tel: 33 1 69 47 54 00
Pax: 33 1 69 47 54 10
This sequence has been generated in the framework of the french plant genomics programme 'Genoplante' (http://www.genoplante.com and http://genoplante-info.infobiogen.fr).
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Triticum aestivum (bread wheat)
Triticum aestivum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CD919380
CD919380.1 GI:32767144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CD919380 749 bp mRNA linear E
G608.113C22F010911 G608 Triticum aestivum cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genoplante, a major partnership french program in Unpublished (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genoplante
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: Genoplante
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Spermatophyta; Magnoliophyta; Īilīopsida; Poalēs; Poaceae;
Pooideae; Triticeae; Triticum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCTATGGAAGTGCACATAC 680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCTATGGCTTGCACAGTTGAGATAGTTGATGATGTACAATCAGCAATTGACCATATACAT
                                  TATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCACTAAAAAACAGAAGGAGTTAATAT 1822
                                                                                                      AAAAACTGATTACCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCT
                                                                                                                                                                                                                TGTTGCTCAAATCAAATCATCAACAAAGATTCCTGTTCTTGGCCATGCTGATGGTGTTTG
                                                                                                                                                                                                                                                                                                                                                           TATTCCTGACAATGTGGGCGAAAAATTGATTGGCCTTATTACAACTAGAGATTAAATTGC
                                                                      AAAAATTGATTACCCAGCTGCCTGCAACGCAATGGAGACGTTGCTTGTTCATAAAGATCT
                                                                                                                                            TGTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATG 1642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 749)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rue Henri Rochefort 91025 EVRY CEDEX France
                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /tissue_type="grain (608 degrees per day after
pollination) "
/clone_lib="G608"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:4565"
/clone="G608113C22"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          cultivar="recital"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            organism="Triticum aestivum"
                                                                                                                                                                                                                                                                                                                                                                                                                                               21.2%;
86.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 540.2; DB 14;
Pred. No. 9.7e-129;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                               ,86
                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 749;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EST 15-JUL-2003
e G608113C22,
                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>٠</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 660
       371
                                                                          311
                                                                                                              1762
                                                                                                                                                                                                                                                                                         131
                                                                                                                                                                                                                                                                                                                                                             71
                                                                                                                                                251
                                                                                                                                                                                                                    191
```

g	Ś	용	δ	B	Ş	占	Ś	皮	\$	밁	Ś	g	ঠ
								,					
	N		N		N		2		H		щ		щ
731	2182	672	2122	612	2063	552	2003	492	1943	432	1883	372	1823
G 731	— ი ა	TAC	-00 100	ATT	ATT	AGC	AGC	CCA	- CCA	GGA	TGA	TTA	TTA
31	2182	ATG	ATGC	CTCC	-01 -01	AGAG	AGAG	TATA	TATT	GTAC	GTAT	TTGT	IGGI
		ACC	-00 -00	GAT	GAT	Acc	ACT.	CAT	CAT	AGT	AGT	666	-ĞA
		rgga	TGGA	Gerg		Lind	LILIC	CGCT		CTA	CTA	CTG	CTA
		CCTC	- CA	CTC		TACC	TACC	ATG	ATG	TGG		TIGO	1160
		91.60		T.T.T.	- 11 - 11 - 11 - 11	TCA	CAG.	AAG	AAG	TTG		GCA.	- GCA
		316-	-GI	IGGA	IGGA	AGTT	AGTT	rgca	rgcr	CACA	PACT	[AAA	-AAA
		TACATGCACGTGGACCTGTGGGTG-TGAAGGTCTTTTAACTACACGATGGCTCTTACGAG	TCCATGCCCGTGGACCAGTGGGTTGGAGGTCTCTTAACTACACGATGGATCTTGCGAG	ATTCTCCGATGGTGCTCGTTTTGGACTCGGTGCTGAGGTTGGCATAAAGTACAGGCCGTA	ATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCAT-AAGCACAGGGCGTA	AGCAGAGACCTTTCTACGTCAAGTTGATAGTGCTGCCGTATTATACAACGCGAGTACAAG	AGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAG	CCATATACATCGCTATGGAAGTGCACATACAGACTGTGTGGTCACTACAGATGATAAAGT	CCATATTCATCGTTATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGT	GGAGTACAGTTCTATGGCTTGCACAGTTGAGATAGTTGATGATGTACAATCAGCAATTGA	TGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTGATGATGATCAATCA	TTATTGTGGGCCTGTTGCGCATAAAGTAITGGGCTACCCAAAAGCAGATTCATTACATCT	TTATGGTGGACCTATTGCGCACAAAGCTCTGGGATTTCCAAAAGCTGTTTCATTTCATCA
		GGT	GGT	GIG	- 6 - 6 - 6	GTG	-Gi	CAG	CAG	AGA	AGT	166	-ii -g
		CTTT		CTG		CIG		ACTO	ATTG	FAGT	TTGI	GCTA	GATT
		TAA	TAA	GGT	_6 -61	CGT	-GI	ii-	TAT	GA.	TGA.	Ω (C)	-00 -10
		CTAC	CTAC	1990	166 166	ATTA	PTTT	GGT	-GTC	IGAT	IGAT	AAAA	
		:ACG	- ACG	ATA	- AT-	TÁC	CAT	ACT	ACT	GTA	GTT	GCAC	-GCIO
		TGG		AGT	- AGC	Acci	AIG	CAG	ACAG	CAAT	- AAT	SATT	_
		Cic	- EAT	ACA	- ACA	ČGÁ	- Ĉ	ATG	- AT Q	CAG		CAT	-Q
		TTAC		3600		GTAC	STAC	ATAA	TAA	AAT	TAAT	FACA	_G _G
			-6 -6		GTA				-G		TGA		-G
		730	2181	671	2121	611	2062	551	2002	491	1942	431	1882

Search completed: March 10, 2004, 23:46:39 Job time : 5827.64 secs

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Title:
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    March 10, 2004, 10:27:40 ; Search time 832.192 Seconds (without alignments) 11202.698 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-026-767-1
2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2421054 segs, 1828716029 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Published_Applications_NA: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gcggctgcggcaaggcg.....tgtgattgcacatatactaa 2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                 /cgn2_6/ptodata/1/pubpna/US08_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US09A_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US09A_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US09C_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US09C_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US10B_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US10B_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US10C_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US10C_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/US10_NEW_PUB.seq:*
/cgn2_6/ptodata/1/pubpna/US10_NEW_PUB.seq:*
/cgn2_6/ptodata/1/pubpna/US10_NEW_PUB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /cgn2_6/ptodata/1/pubpna/US07_PUBCOMB.seq:*
/cgn2_6/ptodata/1/pubpna/PCT_NEW_PUB.seq:*
/cgn2_6/ptodata/1/pubpna/US06_NEW_PUB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _6/ptodata/1/pubpna/US07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -/ Dtodata/1/pubpna/US06_PUBCOMB.seq:*
_6/ptodata/1/pubpna/US07_NEW_PUB.seq:*
_6/ptodata/1/pubpna/PCTUS_PUBCOMB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6/ptodata/1/pubpna/US08_NEW_PUB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4842108
```

SUMMARIES

Result No.	Score	Query Match	Query Match Length	BG	ID	Description
1	2549	100.0	2549	14.	US-10-026-767-1	Sequence 1, Appli
N	1577.2	61.9	2612	12	US-10-425-114-31146	Sequence 31146, A
w	1395.2	54.7	2447	12	US-10-425-114-5243	Sequence 5243, Ap
4.	1386.8	54.4	2418	12	US-10-425-114-4280	•
ഗ	1386.8	54.4	2563	12	US-10-425-114-32617	Sequence 32617, A
თ	1386.8	54.4	2566	12	US-10-425-114-3880	3880,
7	1096	43.0	2181	w	US-09-938-842A-1866	Sequence 1866, Ap
00	1096	43.0	2181		US-09-938-842A-1866	Sequence 1866, Ap
9	1085.6	42.6	2154	ø	US-09-938-842A-1391	Sequence 1391, Ap
10	1085.6	42.6	2154	片	US-09-938-842A-1391	Sequence 1391, A
11	1085.6	42.6	2571	1	US-10-026-767-2	Sequence 2, Appli
12	1079.6	42.4	2214	<u>1</u> 5	US-10-260-238-466	Sequence 466, App
13	1076.8	42.2	2499	12	US-10-424-599-44242	Sequence 44242, A
C 14	966.8	37.9		12	US-10-424-599-44248	Sequence 44248, A
15	881		2708	•	TTO - 10 - 40 F - 11 4 - 00 0 0	2

						ი	ი		ი							a												
4 4 5 4	43	42	41	40	3 9	38	37	36	U U	34	ω	32 	3 1	30	29	28	27	26	25	24	23	22	21	20	19	18	17	5
169.8	171.2	72.	177	189	189.4	190	190	191	191.8	192	203	206.4	13	218	223	243.2	278.2	314.6	371.2	•	ന	434.4	m	590.6	768	773	848	75R
		œ	ė	4	٠.	'n	'n	·σ	'n	'n	ö	ï	4.	'n	٦.	9.5	10.9	12.3	14.6	15.8	16.0	17.0	19.2	23.2	30.1	30.3	33.3	33.4
1371 1248	1299	395	1251	1242	1302	3011208	1163020	1257	570	4763	843	541	1281	1353	1281	792	2507	2907	576	876	568	1241	903	1218	1321	1345	1952	F/08
125	<u>ب</u>	12	12	<u>1</u> 5	15	15	15	12	տ	15	Ŋ	N						14	15	12	15	12	12	<u>ب</u>	12	12	12	1
193 122	-10-369-49	99	122	193	US-10-369-493-26502	US-10-398-221-2058	22	US-10-282-122A-15665	60-238	o	N	N	10-369-49	g	69-493-4369	US-09-770-445-844	-925-301-	-10-171-581	0-260-238	-10-424-599	US-10-260-238-3278	-10-424-599	-10-424-599-4440	-10-260-238	0-425-114	US-10-425-114-24396	-10-424-599-4424	US-10-425-114-8653
Sequence 46107, A Sequence 36327, A	e 44637,	e 58022,	e 32901,	42151,	26502,	205	Sequence 10, Appl	1566	4888	Sequence 3735, Ap	Seguence 111549,	93815,	Sequence 42747, A	e 25789,	Sequence 43699, A	Sequence 844, App	Sequence 397, App	Sequence 114, App	Sequence 5797, Ap	Sequence 44245, A	Sequence 3278, Ap	Sequence 43856, A	Sequence 44403, A	Sequence 3317, Ap	Sequence 21021, A	Sequence 24396, A	Seguence 44244, A	sequence 8653, Ap

ALIGNMENTS

US-10-026-767-1 RESULT 1

```
US-10-026-767-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 3
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1, Application US/10026767 Publication No. US20030014774A1 GENERAL INFORMATION:
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
ORGANISM: Oryza sativa L.
FEATURE:
NAME/KEY: CDS
LOCATION: 99..2249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Hitachi, LTD.
APPLICANT: RIKEN
APPLICANT: RIKEN
APPLICANT: Japan International Research Center for Agricultural Science
APPLICANT: Japan International Research Advancement Institute (BRAIN)
APPLICANT: Bio-oriented Technology Research Advancement Institute (BRAIN)
APPLICANT: NICENTION: Transgenic rice plant and its family with environmental
TITLE OF INVENTION: stress resistant by proline accumulation of high level and its
TITLE OF INVENTION: production.
FILE REFERENCE: NTO1P0353
CURRENT APPLICATION NUMBER: US/10/026,767
CURRENT FILING DATE: 2001-12-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PUBLICATION INFORMATION:
AUTHORS: Yumiko Igarashi, Yoshu Yoshiba, Yukika Sanada, Kazuko
AUTHORS: Yamaguchi-Shinozaki, Keishiro Wada, Kazuo Shinozaki
AUTHORS: Yamaguchi-Shinozaki egene for 1-pyrroline-5-carboxylate
ITILE: Characterization of the gene for 1-pyrroline-5-carboxylate
ITILE: synthetase and correlation between the expression of the generation of the grant o
                                                                                                                                                                                                                PAGES: 857-865
DATE: 1996-12-03
DATABASE ACCESSION NUMBER: D49714
DATABASE ENTRY DATE: 1995-03-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VOLUME: 33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2549
100.0%; Score 2549; DB 14; Length 2549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene and
```

Š	8 8	유 성	B 8	B 8	B 8	유 성	B &	40	장	B &	B &	B 8	8 8	유 성	B &	B 8	Db dq	Besi Mat
1021 ATCTACAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGATGTTTGCAGATGCTT 1080	961 AATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGC 1020 	901 TTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACAAGAATGCGAAITTGTGGG 960 	841 TGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAAAATCGGAGCATTC 900 	781 TTGGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGTGAAGGCTGCTGTCT 840	721 AACCATCATAAAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGAAATCACTT 780 	661 AAGCTGATCTCCTTATTCTGCTCAGTGATGGGTGGATGGGTTGTATAGTGGTCCACCAAGTG 720	601 ATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAACTGA 660	541 AAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGG 600	481 TTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTA 540	421 ATATGITGITTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATT 480	361 TGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACG 420	301 AGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTGCAAAAGCCACAGA 360 	241 TGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTTGGAGTGGGGGGAC 300	181 GACAAGATGGAAGATTGGCTTTGGGCAAGGTTGGAGCTCTGTGCGAGCAGGTTAAGGAAC 240	121 GGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAGGTGGGCACTGCAGTTGTCTCCA 180	61 TGGAGGAGGAGAGGCTGAGGCTAGGAAGCGGTTTCGCCATGGCGAGCGTCGACCCGTCCC 120	1 GCGCTGCGGCGCAAGGCGGAGACGTGGAGAGGGATTTACAGGTAGAGGAAGGG 60	Pred. No. 0; 0; Mismatches 0; Indels 0; Gaps
																٠.		
																		
₽ .5	B B &	₽ ₽ 1	성 음 #	\$	S B &	5 B 5	B &	B 2	B 2	B 4	5 8 8	? F 4	5 B 8	? B 5	S B :	ov B	& A	& B
2101 TTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAA	, ,	981	р р і	., p., p.	1861 CARRAGEMENTATION OF THE TOTAL TRANSPORT OF THE TOTAL TRANSPORTED TO THE TOTAL TRANSPORTED T			6 2 1	5 5 6	5 01	1 4 T	381	3 3 6	201	201			1021 АГСТАСАGААТТТGТСАГСАGAGGAACGAAAAAAGATATTGCTAGATGTTGCAGAGGTGCTT

```
RESULT 2
US-10-425-114-31146
                                                                                                      Ś
                                                                                                                                                    밁
                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                   ğ
                                                                                                                                                                                                                                   占
                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-425-114-31146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement FILE REFERENCE: 38-21 (153313) B CURRENT APPLICATION NUMBER: US/10/425,114 CURRENT FILING DATE: 2003-04-28 NUMBER OF SEQ ID NO 31146
SEQ ID NO 31146
LENGTH: 2612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 31146, Application US/10425114
Publication No. US20040034888A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                  Matches 1795; Conservative
                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Scree
APPLICANT: Tabas
APPLICANT: Cao,
                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION: Clone ID: UC-ZMFLB73134D03_FLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                     Y Match 61.9%;
Local Similarity 83.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2521 ACTAACATCTGTGATTGCACATATACTAA 2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2461 AAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGCTTGTAATGAGCGAT 2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2401 CAAAAATTAATTCATCAGTTCTGAGAGCAAGATTTTGGAGGTTCAGCTTCTCCATGTAAT 2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2281 TAGGTGAATATCCTTTTAAGAATGGATTGACTACTTTATTTTTGTCATCTTGTACAAGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2281 TAGGTGAATATCCTTTTAAGAATGGATTGACTACTTTATTTTGTCATCTTGTACAAGCAT
276 TCAGGTGCTGTTGGAGTGGGGGGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGC 335
                                                                                                             216 GCTCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACC
                                                                                                                                                         183 AAGGTGGGCACTGCAGTTGTCACGAGGCATGATGGGCGAGTATCCACAGGCAATTTTGGT 242
                                                                                                                                                                                                                                            123 GTCATGGCCACCGCAGACCAGAGCCGTATTTTCATGAAGGACGTCAAACGCGTCATCATC
                                                                                                                                                                                                                                                                                      96 GCCATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGGACGTGAAGCGCGTCATCATC 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTACACGATGGATCTTGCGAGGACGTGGCCAAGTGGTGAATGGTGACAAGGATGTCGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTGACAAGGATGTCGTGT 2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGTAAATTCAGTTCTGAGAACTTGTGTACCAACGCGCTATGTTGCTTGTAATGAGCGAT
                                                                     GTTCTTTGTGAACAGGTGAAAGAGATAAATGCTCTAGGATACGAGGTGATCATTGTGTCC
                                                                                                                                                                                                AAGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTAACATCTGTGATTGCACATATACTAA 2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAAAATAAATTCATCAGGTTCTGAGAGCAAGATTTTGGAGGTTCAGCTTCTCCATGTAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTATTGCGGCATTCCGATGGATTATTGATTTTGGGGGGTTCCCACTTTCAAATGTGACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTATTGCGGCATTCCGATGGATTATTGATTTTGGGGGGTTCCCACTTTCAAATGTGACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTTAGCCTGTTCAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACACCCATAAGAGTCTTCCTTTGCAATGAGGTCAAATGCTCCTTTTAGCCTGTTCAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Yongwei
                                                                                                                                                                                                                                                                                                                                0; Mismatches 363; Indels
                                                                                                                                                                                                                                                                                                                                                     Score 1577.2; DB 12; Length 2612; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2520
                                                                                                               275
                                                                                                                                                                                                  215
                                                                                                                                                                                                                                            182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2280
                                                                     302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                       S
                                                                                   밁
                                                                                                                             Ś
                                                                                                                                                                           문
                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                       1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           303 TCAGGTGCTGTTGGTGGGGAAGCAGAGGCTCAATTACAGGAAGCTTGTCAATAGCAGC 362
                                GITCAGATIGCATCITTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAA 1415
                                                                                                                      AAAACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCGGTCTTTTGGCTATAGAACTTAAAGCAGATCTTCTTGTTCTACTCAGTGACGTGGAT
    GTCCAGATTGCATCTTAGCGATTCGAAGTGGCAATGGTCTTCTCTTGAAAGGTGGAAAA 1442
                                                                                          AAAACATCATGTCCTTTGGGTGTCCTATTGGTTATTTTTTGAGTCCAGGCCTGATGCCTTG
                                                                                                                                                                                                                       GAAGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAG
                                                                                                                                                                                                                                                                                                             ACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATG
                                                                                                                                                                                                                                                                                                                                                                                     GAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTCACAAGAATGCGAATTTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAGCTAAAGTGAAGGCTGCTCTCGTGGCTTCAAACAGTGGCACACCTGTTGTTATAACA 902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGTTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAA 755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGGATAATGACAGTTTA 635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTGCTGATATGCAAAAGCCACAGACGGAGCTGGATGGAAAGGCTTGCGCTGCCGTTGGA 422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTGCTGATCTGCAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGT 395
                                                                                                                                                                             GAAGACCCAATCAACCAAATACTCAAAAGAACAGAGATTGCTGAAAATTTAATTCTCGAG
                                                                                                                                                                                                                                                                                                                                                         GAAGCCGATGTAGCTGCAGCGCAAGATGCTGGATATGAGAAATTTTTTGGTTGATAGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                             ATATTGCTAGACGTGGCGGATGCTTTGGAGAAAAATGAGAATCTAATTAGGACCGAGAAT 1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAAT 1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTACTGCAAGAGAATGTTCAAGGCGTCTGCAGAATTTGTCGTCGGATGAGCGCAATAAA 1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTGCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAG 1055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTGGATCTGCATCTGGGAGCATCATTAGAGTTCTCCAAGGAGAAGAATTGGTACTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTGGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACA 875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCACCAGAAAGGCTCCGTATGAGGATTCATCGGGTATATTTTGGGATAATGACAGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTGTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATC 575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAACTTCTTGTGACAGACAGTGATTTTGAGAATCCAAACTTCAGGGAGAGGCTTCGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAACTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAA 515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGAGTGGCCTCATGGCTCTCTATGATATGCTATTTACTCAACTTGATGTATCCTCTTCC 482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGAGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCT 455
                                                                                                                                                                                                                                                                   ACCCTAAAGCCAGGAAAGATATCAGCCCTCGCGAAATCCATTCGCACTCTTGCACGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTTCATAAGGACGCGAGTTTGTGGGAACCATCCAGTGATGTTAGTGCATGTGAGATGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           695
                                                                                                                                                                                1322
                                                                                                                                                                                                                                                                                                             1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 722
                                                                                            1382
                                                                                                                                                                                                                                                                                                                                                                                                     1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                542
                                                                                                                                                                                                                          1295
                                                                                                                                                                                                                                                                      1262
                                                                                                                                                                                                                                                                                                                                                         1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1022
```

DB 12; Length 2447;

0;

0

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                            RESULT 3
US-10-425-114-5243
                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                               Sequence 5243, Application US/10425114
Publication No. US20040034888A1
GENERAL INFORMATION:
APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven_E
APPLICANT: Screen, Steven_E
             APPLICANT: Tabaska, Jack E
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313)B
CURRENT APPLICATION NUMBER: US/10/425,114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1743
                                                                                                                                                                                                                                                                                                                                                                                                                             2163
                                                                                                                                                                                                                                                                                                                                                                                      2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTGCGCACAAAGCTCTGGGATTTCCAAAAGCTGTTTCATTTCATCATGAGTATAGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATT 1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGCCATGAGATCAAACAAAGTATTGCATAAGGTTATAACTGGTGCCATTCCTAGCAAC 1502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAAT 1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGGCCTGCGCAATTGAGTTTGTTGATGATGTACAGTCAGCGATTGACCATATACATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCA 1775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGGGTGAAAAACTTATTGGCCTTGTTACAAGTAGAGACGAAATTGCTGATTTACTAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAG
                                                                                                                                                                                                                                                                                                                                                                         GTGAATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAATGAGGTC 2253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGGCCTGCACTGTTGAGTTTGATGATGTTCAATCAGCAATTGACCATATTCATCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCAGCAGCCTGCAATGCTATGGAGACATTGCTTGTTCATAAAGATCTTATAAAGGCTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTAC 1715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGACATCAACTAAGATCCCTGTTCTTGGTCATGCTGATGGTATCTGTATACATC 1682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATGGAAGTGCACATACAGATTGCATTGTCACTACAGATGATAAAGTAGCAGAAACTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTCTTGATGACTTACTGCTATCACTCAAAACAAAAGGAGTTGCTATTTTTGGGGGGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATC 1595
                                                                                                                                                                                                                                                                                                                                             GTGAACGGTGACAATGATATCGCATACACCCATAAGAACCTTCCATTGCCATGAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                CCCGTGGGTGTTGAAGGTCTCTTAACAACGCGCTGGATCATGCGAGGGAGCGGGCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAGTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATACATGCTCGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTGCGTCAAGTTGATAGTGCTGCTGTGTTTCATAATGCAAGCACACGATTCTCTGACGGG
                                                                                                                                                                                                                                                                                                                                                   2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1835
                                                                                                                                                                                                                                                                                                                                                                                                                                2222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2042
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1922
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ŕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; OTHER INFORMATION: Clone ID: 700449031_FLI US-10-425-114-5243
                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                  Ś
                                                                              멼
                                                                                                                     Ş
                                                                                                                                                               片
                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT FILING DATE:
NUMBER OF SEQ ID NOS:
SEQ ID NO 5243
LENGTH: 2447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 1706; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: DNA
ORGANISM: Zea mays
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    334
  855
                                         934
                                                                                795
                                                                                                                          874
                                                                                                                                                                 735
                                                                                                                                                                                                        814
                                                                                                                                                                                                                                               675
                                                                                                                                                                                                                                                                                      754
                                                                                                                                                                                                                                                                                                                              615
                                                                                                                                                                                                                                                                                                                                                                     694
                                                                                                                                                                                                                                                                                                                                                                                                              555
                                                                                                                                                                                                                                                                                                                                                                                                                                                     634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    574 TCAGCACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTT 633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               154 TCAAGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94 TCGCCATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGGACGTGAAGCGCGTCATCA 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                TCTTTCACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGG 993
                                                                                                                   CAAGTGGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTC 933
                                                                                                                                                                                                                                                                                                                                                              ATGGGTTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTA 753
                                                                                                                                                                                                                                                                                                                                                                                                                                                   тадсаддастоттодскастодаластдаластстсттаттстдстсадтдатотд
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGACTGTTTTTCACTGTTAGATCTTAAAGTAGTACCCTTATTTAATGAGAATGATGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAACIGITGAGICATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCA 573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCAGAGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTTCGCAGATCTGCAAAATCCTCAGATGAACTTTGATGGAAAGGCATGTGCTGCTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTTTGCTGATCTGCAAAAAGCCACAGATGGAGTTAGATGGAAAAGGCTTGTGCCGCTGTTG 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTCAGGAGCTGTTGGGGAGGCAGAGGCTCCAATACCGTAAACTTATCCATAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTCTCTCTGTGAACAGGTGAAGCAACTGAATTTTCAAGGGTATGAGGTGATTCTGGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGCTCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGCCATGGAGACCGCCGATCCTGCCCGTGCATTCGTGAAGGACGTCAAGCGAATCATTA
  TTTTCCACAATGAAGCAAATTTGTGGGCATGTTCCAAGGAAGCTACAGCCCGAGAGATGG
                                                                                CAAGTGGATTTGCAACGGATAGCATCATTACAGTTCTCAAAGGCGAAAAGATCGGTACAC
                                                                                                                                                                                                                                                 ATGAAAAGCATGGGAAGCTAATTAGTTTTTGGAGAGAAATCTAGTGTTGGAAGAGGTGGCA
                                                                                                                                                                                                                                                                                    AGGGACTCTATAGTGGTCCACCAAGCGATCCTCAGTCAAAGATTATCCACACATATGTCA
                                                                                                                                                                                                                                                                                                                                                                                                              TAGCAGCTCTGTTGGCAGCAGAACTTAATGCTGATCTTCTTATCATGCTTAGTGATGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCAGTACCCGGAGACAGCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTC 554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCAACTTCTTGTGACGGATCGTGATTTCAAGGATCCAAGTTTTGGGGACCAGCTCCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 стсаасттсттегсассеасаетсатттеаадаасссааасттссеедаесаастсасте
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ĠŔĊĄĄĄĠĬĠŦĊĊĬĠĄĬĠĠĊĠĄĬĊĬĄĬĠĄĊĄĊĄŤŖŦĬĬĄĠĊĊĄĄĊĬĬĠĄĬĠĬĄĄĊĠŦĊĄĨ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTCAGGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAAGGTGGGCACGGCTGTTGTCACTGGCATGAATGGCCGATTGGCCATGGGGAGGCTCG
                                                                                                                                                               TGCAAGCTAAAGTGACTGCTGCTAATGCTGCATCAAAAGGTGTACCTGTTGTTATTG 794
                                                                                                                                                                                                      TGACAGCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTA 873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2003-04-28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             54.7%;
76.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches 518; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1395.2;
Pred. No. 0;
```

494

434 513 374 453 254 333 194 273 134 213 74

314

914

854

734

674

```
Ş
                                                                                                                                                              뮹
                                                                                                                                                                                             á
                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                밁
                                                                                                                   8
                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
  1935
                                                                                                                                                                                                                                                                                                                                                                                                              1635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1174
                                                                                                                                                              1815
                                                                                                                                                                                                     1894
                                                                                                                                                                                                                                                                                      1834
                                                                                                                                                                                                                                                                                                                               1695
                                                                                                                                                                                                                                                                                                                                                                                                                                          1714 ACCCAGCAGCCTGCAATGCAATGGAGACCTTACTACTAGTTCATAAGGATCTTATGAAGAGTC 1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1095
                                                                                                                                                                                                                                                                                                                                                                1774 CAGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGAC 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1054 AGATATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGA 1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1114 ATGAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGAT 1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        915 CAGTIGCGGCAAGAGACIGTTCGAGGCGTCTACAGAAGTTGTCATCAGAGGAACGCAAAC 974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     994 CTGTTGCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAA 1053
Trotgoagoaagtrgatagtgoogotgtgtrtoataargoaagoacaaggttrtigtgatg 1994
                                                                                                                                                                                      CTATGGCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATAITCATC 1953
                                                                                                                                                                                                                                                                                                                             AGCTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAA 1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAA 1533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGAAGTTATGAGATCAAATGCAATATTACACAAGGTCATAACTGGGGTCATTCCAGATA 1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAAAACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCT 1353
                                                                                                                     GTTATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTT
                                                                                                                                                                                                                                          CTGTTGCACATGACAAACTGAAAGTACCAAAGGTAGACTCATTTCGTCATGAGTATAGCT 1814
                                                                                                                                                                                                                                                                                                                                                                                                           ATCCAGCAGCATGTÄÄTGCAÄTGGÄÄÄAACACTÄCTTGTTCÄTÄÄÄÄÄTCTTÄÄCÄÄGÄGTG 1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATT 1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAAAGCAACTAAGATTCCAGTTTTAGGTCATGCTGATGGTATCTGCCATGTTTACA 1574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATA 1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGCTTGATGATGTAATTGATCTTGTCATTCCGAGAGGTAGTAAGTCTCTAGTCTCCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGTTGGCAAAAAGCTCATAGGCCTTGTGACTAGCAAAGAGGAAATTTGCTGATCTGCTAG 1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTA 1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAAAGCATATTGCCCCATTGGGTGTTCTGCTCATTATTTTTGAGTCTCGTCCTGATGCAT 1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGACCCTAAAGCCAGGAAAGATAACAAACCTTGCAAGATCCATTCGTAAAACTGCTGACA 1154
                                    TTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATG 2073
                                                                              GTTATGGAAGTGCACACACAGACTGCATCATCACAACTGATAGAAGTGCTGCAGAGGCCCT
                                                                                                                                                              CAATGGCATGCACAGTCGAATTTGTTGATGATGTGCAGTCAGCTATCGATCACATAAATC 1874
                                                                                                                                                                                                                                                                                    CTATTGCGCACAAAGCTCTGGGATTTCCAAAAAGCTGTTTCATTTCATCATGAGTATAGTT 1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGGTCCAGATTGCATCTCTAGCGATCCGAAGTGGTAATGGTCTCCTTTTGAAAGGAGGGA 1334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAA 1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGGAGGACCCTATTTCCCATACATTGAAAAGAACAGAGGTTGCTAAAGATCTGGTTTTTG 1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATA 1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGATTTTGCTAGATATTGCTGATGCTCTGGAAGCAAATGAGGATGCAATTATGTCTGAAA 1034
                                                                                                                     2013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1514
                                                                                1934
```

```
Sequence **.

Sequence **.

Publication No. ...

GENERAL INFORMATION:

APPLICANT: Liu, Jingdong

APPLICANT: Xhou, Yihua

APPLICANT: Kovalic, David K.

**PPLICANT: Screen, Steven E

**NT: Tabaska, Jack E

Tabaska, Jack E

**NT: Tabaska, Jack E

**NT: Tabaska, Jack E

**NT: Tabaska, Jack E
g
                            S
                                                                                 밁
                                                                                                                          Ś
                                                                                                                                                                          밁
                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                 멼
                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                  멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; OTHER INFORMATION: Clone ID: 700352413_FLI US-10-425-114-4280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 4
US-10-425-114-4280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement FILE REFERENCE: 38-21 (5313)B CURRENT APPLICATION NUMBER: US/10/425,114 CURRENT FILING DATE: 2003-04-28 NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 4280
SEQ ID NO 4280
DENOTH: 2418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 4280, Application US/10425114 Publication No. US20040034888A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 1694; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2074 GGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTG 2133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2235 TATT 2238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2314 CTTT 2317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2194 TGGTGAATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAATGAGGTC 2253
376 GTCAAAGTGTCCTGATGGCGATCTATGACACTTATTTTAGCCAACTTGATGTAACGTCAT
                                    394 GTCAGAGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCAT
                                                                                                                               334 GCTTTGCTGATCTGCAAAAGCCACAGATGGAAGTTAGATGGAAAGGCTTGTGCCGCTGTTG 393
                                                                                                                                                                                                                     274 CCTCAGGTGCTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCA 333
                                                                                                                                                                                                                                                                                                                                                                                                       154
                                                                                                                                                                                                                                                                                                                                                         136 TCAAGGTGGGCACGGCTGTTGTCACTGGCATGAATGGCCGATTGGCCATGGGGAGGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                  76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94 TCGCCATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGGACGTGAAGCGCGTCATCA 153
                                                                                                                                                                                                                                                                   GTTCTCTCTGTGAACAGGTGAAGCAACTGAATTTTCAAGGGTATGAGGTGATTCTGGTAA
                                                                                                                                                                                                                                                                                                         GAGCTCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCA
                                                                                                                                                                                                                                                                                                                                                                                                     TCAAGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGCCATGGAGACCGCCGATCCTGCCCGTGCATTCGTGAAGGACGTCAAGCGAATCATTA 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAATGCTCCTTTTAGCCTGTTCAGGAGTAGGTGAATATCCTTTTAAGAATGGATTGACTA 2313
                                                                                                                                                                            CCTCAGGAGCTGTTGGGGTGTTGGGAGGCAGAGGCTCCAATACCGTAAACTTATCCATAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATAACCTCCGTTGTGGTCGTAACGAATGGCTGGACTTCCCTTTTAAGTACCATTTTCTT 2234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACCTGTTGGAGTTGATGGACTTCTAACTACTCGCTGCATTTTGCGCCGGTAGTGGACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACCAGTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGACGCGTTTTGGGCTAGGTGCTGAGGTTGGCATAAGTACAGAGCGCATACATGCCCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGTGAATGGTGACAAGGGAGTGGTTTACACCCACAAGGATCTTCCTTTGCAATGAGGCA 2174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               76.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 1386.8; DB 12; Lengt Pred. No. 0; O; Mismatches 512; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 2418;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ٥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                           453
                                                                                                                                                                                                                                                                                                                                                            195
435
                                                                                                                                                                                                                                                                                                                   273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2114
                                                                                      375
                                                                                                                                                                            315
                                                                                                                                                                                                                                                                   255
                                                                                                                                                                                                                                                                                                                                                                                                          213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2054
```

```
1474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1156
1456 CTGTTGGCAAAAAGCTCATAGGCCTTGTGACTAGCAAAGAGGAAATTGCTGATCTACTAG 1515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1234 TGGAAGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTG 1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      454
                                                          ATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAA 1533
                                                                                                                                                                                   AAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTA 1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGATATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGTGGGTTTGCAACGGATAGCATCATTACAGTTCTCAAAGGCGAAAAGATCGGTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGACAGCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTA 873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGGACTCTATAGTGGTCCACCAAGCGATCCTCAGTCAAAGATTATCCACACATATGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAGCACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTT 633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGACTGTTTTTTCACTGTTAGATCTTAAAGTAGTACCCTTATTTAATGAGAATGATGCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAACTGTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCAACTTCTTGTGACGGATCGTGATTTCAAGGATCCAAGTTTTGGGGACCAGCTCCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATA 1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGAT 1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGTTGCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAA 1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTTCCACAACGAAGCAAATTTGTGGGCATGTTCCAAGGAAGCTACAGCCCGAGAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGTGGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGGGTTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGCAGCTCTGTTGGCAGCAGCAACTTAATGCTGATCTTCTTATCATGCTTAGTGATGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGCAGGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCAACTTCTTGTCACCGACAGTGATTTTGAGAACCCGAAAGTTCCGGGAGCAACTCACTG
                                                                                                                                                                                                                                                                                                        TGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAA 1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGATTTTGCTAGATATTGCTGATGCTCTGGAAGCAAATGAGGATGCAATTAGGTCTGAAA 1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGTTGCGGCAAGAGACTGTTCGAGGCGTCTACAGAAGTTGTCATCAGAGGAACGCAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTTTCACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCAAGCTAAAGTGTCTGCTGCTAATGCTGCATCAAAAGGTGTACCTGTTGTCATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGAAAAGCATGGGAAGCTAATTAGTTTTGGAGAGAGTCTAGTGTTGGAAGAGGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAAAACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCT 1353
                                                                                                                            AAGAAGTTATGAGATCAAATGCAATATTACACAAGGTCATAACTGGAGTTATTCCCGATA 1455
                                                                                                                                                                                                                                                        TGGTCCAGATTGCATCTAGCGATCCGAAGTGGTAATGGTCTCCTTTTGAAAGGAGGGA
                                                                                                                                                                                                                                                                                                                                                                                    AGAAAGCATATTGCCCATTGGGTGTTCTTCTCATTATTTTTGAGTCTCGTCCTGATGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGAGGACCCTATTTCCCATACATTGAAAAGAACAGAGGTTGCTAAAGATCTGGTTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGACCCTAAAGCCAGGAAAGATAACAAATCTTGCAAGATCCATTCGTAAAACTGCTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                675
                                                                                                                                                                                                                                                        1395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1035
```

S 맑 Ś 밁 Ś 밁 Ś 밁 Ś 뭐 Ś 吊 S 밁 á 밁 Ś 밁 8 뭐 S 뭐 ঠ 밁

청 유

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
밁
                               S
                                                                           밁
                                                                                                          δ
                                                                                                                                                      멅
                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                               1936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1876
2236 AATAACCTCCGTTGTGGTCGTAACGAATGGCTGGACTCCCCTTTTA 2281
                                                                                                                   2194
                                                                                                                                                                                              2134 GACCAGTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1756 AGGGACTTGATGATCTÁTTAGTGGAACTTGÁAÁAGGAAGGAGTAGTTÁTTTATGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1774 CAGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1534 AGCTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAA 1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTATGGCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGCTTGATGATGTAATTGATCTTGTCATTCCGAGAGGTAGTAAGTCTCTAGTTTCCCAAA 1575
                                   AAATGCTCCTTTTAGCCTGTTCAGGAGTAGGTGAATATCCTTTTAA 2299
                                                                                                                   TGGTGAATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAATGAGGTC
                                                                                                                                                                                                                                      GGACGCGTTTTGGGCTAGGTGCTGAGGTTGGCATAAGTACAGAGCGCATACATGCCCGCG
                                                                                                                                                                                                                                                                          GGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTG
                                                                                                                                                                                                                                                                                                                  TTCTGCAGCAAGTTGATAGTGCCGCTGTGTTTCATAATGCAAGCACAAGGTTTTTGTGATG
                                                                                                                                                                                                                                                                                                                                                     TTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATG
                                                                                                                                                                                                                                                                                                                                                                                             GTTATGGAAGTGCACÁCAGACTGCATCATCACAÁCTGATAGAAGTGCTGCÁGAGGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAATGGCATGCACAGTCGAATTTGTTGATGATGTGCAGTCAGCTATCGATCACATAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGTTGCACATGACAAGTTGAAAGTACCAAAAGGTAGACTCATTTCGTCATGAGTATAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATCCAGCAGCATGTAATGCAATGGAAACACTACTTGTTCATAAAGATCTTAACAAGAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTC 1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAAAGCAACTAAGATTCCAGTTTTAGGTCATGCTGATGGTATCTGCCATGTTTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATA 1653
                                                                           TGGTGAATGGTGACAAGGGAGTGGTTTACACCCAAAGGATCTTCCTTTGCAATGAGGCA 2235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1635
                                                                                                                                                                                                  2193
                                                                                                                                                                                                                                                                              2133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1755
                                                                                                                                                           2175
                                                                                                                                                                                                                                        2115
                                                                                                                                                                                                                                                                                                                                                                                                 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                       2013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1935
                                                                                                                                                                                                                                                                                                                    2055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1695
```

```
US-10-425-114-32617

Sequence 32617, Application US/10425114

Publication No. US20040034888A1

GENERAL INFORMATION:
APPLICANT: Liu, Jingdong
APPLICANT: Liu, Jingdong
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
APPLICANT: Oscio, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313)B
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT APPLICATION NUMBER: US/10/425,114
SEQ ID NO 32617
LENGTH: 2563
TYPE: DNA
```

```
ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; ORGANISM: Zea mays
; FEATURE:
OTHER INFORMATION: Clone ID: UC-ZMFLMO17010E08_FLI
US-10-425-114-32617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                        Ş
                                                                                         밁
                                                                                                                       Ś
                                                                                                                                                              밁
                                                                                                                                                                                               5
                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 54.4%;
Best Local Similarity 76.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 1694; Conservative
                1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             311
                                      994 CTGTTGCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCAGCAGAGGAACGAAAAA 1053
                                                                                         971
                                                                                                                                                                                                         874
                                                                                                                                                                                                                                                                                814
                                                                                                                                                                                                                                                                                                                                                                                                                                       694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      334 GCTTTGCTGATCTGCAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTG 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       274 CCTCAGGTGCTGTTGGAGTGGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCA 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              131
                                                                                                                     934 TCTTTCACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGG
                                                                                                                                                                  911 CAAGTGGGTTTGCAACGGATAGCATCATTACAGTTCTCAAAGGCGAAAAAGATCGGTACAC
                                                                                                                                                                                                                                             851
                                                                                                                                                                                                                                                                                                                                                 731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        154 TCAAGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTTGGGCAGGGTTG 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94 TCGCCATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGGACGTGAAGCGCGTCATCA 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGCTCTGTGCGAGGAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCA
                  ĊĄĠŢŢĠĊĠĠĊĄĄĠĄĠĄĊŢĠŢŢĊĠĄĠĠĊĠŢĊŢĄĊĄĠĄĄĠŢŢĠŢĊĄŢĊĄŢĊĄĠĄĠĠĄĄĊĠĊĄĄĄC 1090
                                                                                                                                                                                                                                                                              TGACAGCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTA 873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAACTGTTGAGTCATTAGTTAGATCTTAAAGTTATACCAATATTTTAATGAAAATGATGCCA 573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTCTCTCTGTGAACAGGTGAAGCAACTGAATTTTCAAGGGTATGAGGTGATTCTGGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGCCATGGAGACCGCCGATCCTGCCCGTGCATTCGTGAAGGACGTCAAGCGAATCATTA 190
                                                                                                                                                                                                     CAAGTGGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGGGTTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTA 753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGCAGGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCAGCACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTT 633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCAACTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTG 513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCAAAGTGTCCTGATGGCGATCTATGACACATTATTTAGCCAACTTGATGTAACGTCAT 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTCAGAGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCAT 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTCAGGAGCTGTTGGTGTTGGGAGGCAGAGGCTCCAATACCGTAAACTTATCCATAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAAGGTGGGCACGGCTGTTGTCACTGGCATGAATGGCCGATTGGCCATGGGGAAGGCTCG 250
                                                                                       TTTTCCACAACGAAGCAAATTTGTGGGCATGTTCCAAGGAAGCTACAGCCCGAGAGATGG
                                                                                                                                                                                                                                           TGCAAGCTAAAGTGTCTGCTGCTAATGCTGCATCAAAAGGTGTACCTGTTGTCATTG
                                                                                                                                                                                                                                                                                                                       ATGAAAAGCATGGGAAGCTAATTAGTTTTGGAGAGAAGTCTAGTGTTGGAAGAGGTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                  AAGGACTCTATAGTGGTCCACCAAGCGATCCTCAGTCAAAGATTATCCACACATATGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAGCAGCTCTGTTGGCAGCAGAACTTAATGCTGATCTTCTTATCATGCTTAGTGATGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAGTACCCGGAGACAGCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTC 670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGACTGTTTTTTCACTGTTAGATCTTAAAGTAGTACCCTTATTTAATGAGAATGATGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCAACTTCTTGTGACGGATCGTGATTTCAAGGATCCAAGTTTTTGGGGACCAGCTCCGTG 550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTTCGCAGATCTGCAAAATCCTCAGATGAACTTTGATGGAAAGGCCTGTGCTGCTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches 512; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1386.8; DB 12; Length 2563; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        310
                                                                                           1030
                                                                                                                                993
                                                                                                                                                                      970
                                                                                                                                                                                                         933
                                                                                                                                                                                                                                               910
                                                                                                                                                                                                                                                                                                                         850
                                                                                                                                                                                                                                                                                                                                                                                                    790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    693
                                                                     Ś
                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
S
                                밁
                                                                                                                                          S
                                                                                                                                                                                     片
                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               먒
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1174
                                                                                                                                                                                         1991
                                                                                                                                                                                                                                                                                                                                             1871
                                                                                                                                                                                                                                                                                                                                                                                                                        1811 AGGGACTTGÁTGÁTCTÁTTAGTGGAAACTTGAAAAGGAAGGAGTAGTTATTTATGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1654 TTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATT 1713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1354 TGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAA 1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1054 AGATATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGA 1113
                                                                                                                                                    2014
                                                                                                                                                                                                                                                                    1931
  2134 GACCAGTGGGTGTTGAÁGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGAC 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTTGTCTCTAAA 1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTA 1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGTCCAGATTGCATCTCTAGCGATCCGAAGTGGTAATGGTCTCCTTTTGAAAGGAGGGA 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAAGCATATTGCCCCATTGGGTGTTCTTCTCATTATTTTTGAGTCTCGTCCTGATGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAAAACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTTGAGTCCCGACCTGATGCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATA 1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAAGCCTTTGGTTGCTAGAT 1173
                                                                                                                                        TTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATG
                                                                                                                                                                                         GTTATGGAAGTGCACACACAGACTGCATCATCACAACTGATAGAAGTGCTGCAGAGGCCT
                                                                                                                                                                                                                                                                                                    CTATGGCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATC 1953
                                                                                                                                                                                                                                                                                                                                                                                TCAAAGCAACAACTAAGATTCCAGTTTTAGGTCATGCTGATGGTATCTGCCATGTTTACA 1690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATA 1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGTTGGCAAAAAGCTCATAGGCCTTGTGACTAGCAAAGAGGAAATTGCTGATCTACTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGAAGTTATGAGATCAAATGCAATATTACACAAGGTCATAACTGGAGTTATTCCCCGATA 1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGAGGACCCTATTTCCCATACATTGAAAAGAACAGAGGTTGCTAAAGATCTGGTTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGAAGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTG 1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGACCCTAAAGCCAGGAAAGATAACAAATCTTGCAAGATCCATTCGTAAAACTGCTGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGATTTTGCTAGATATTGCTGATGCTCTGGAAGCAAATGAGGATGCAATTAGGTCTGAAA 1150
                                                                         GGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTG 2133
                                                                                                             TTCTGCAGCAAGTTGATAGTGCCGCTGTGTTTCATAATGCAAGCACAAGGTTTTGTGATG
                                                                                                                                                                                                                           GTTATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTT
                                                                                                                                                                                                                                                                  CAATGGCATGCACAGTCGAATTTGTTGATGATGTGCAGTCAGCTATCGATCACATAAATC
                                                                                                                                                                                                                                                                                                                                             CTGTTGCACATGACAAGTTGAAAGTACCAAAAGGTAGACTCATTTCGTCATGAGTATAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCCAGCAGCATGTAATGCAATGGAAACACTACTTGTTCATAAAGATCTTAACAAGAGTG 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGCTTGATGATGTAATTGATCTTGTCATTCCGAGAGGTAGTAAGTCTCTAGTTTCCCCAAA
                                    GGACGCGTTTTGGGGCTAGGTGGCTGGGCATAAGTACAGAGCGCATACATGCCCGCG
      2193
                                        2170
                                                                                                                                                        2073
                                                                                                                                                                                             2050
                                                                                                                                                                                                                                                                      1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1270
                                                                                                                 2110
                                                                                                                                                                                                                                 2013
                                                                                                                                                                                                                                                                                                                                                 1930
                                                                                                                                                                                                                                                                                                                                                                                                                          1870
```

```
RESULT 6
US-10-425-114-3880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; FEATURE:
; OTHER INFORMATION: Clone ID: 700346464_FLI
US-10-425-114-3880
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  멂
                                                                                                                                                   Ş
                                                                                                                                                                                                 D,
                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                       Ś
                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 3880
LENGTH: 2566
TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 3880, Application US/10425114
Publication No. US20040034888A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 54.4%;
Best Local Similarity 76.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 1694; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21 (5331)8
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEG ID NOS: 73128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2254 AAATGCTCCTTTTAGCCTGTTCAGGAGTAGGTGAATATCCTTTTAA 2299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2194 TGGTGAATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAATGAGGTC 2253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2291 AATAACCTCCGTTGTGGTCGTAACGAATGGCTGGACTCCCCTTTTA 2336
                     555
                                                                                                                                                      454
                                                                                                                                                                                                    435
                                                                                                                                                                                                                                             394
                                                                                                                                                                                                                                                                                           375
                                                                                                                                                                                                                                                                                                                                       334
                                                                                                                                                                                                                                                                                                                                                                                  315
                                                                                                                                                                                                                                                                                                                                                                                                                            274 CCTCAGGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCA 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94 TCGCCATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCA 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACCTGTTGGAGTTGATGGACTTCTAACTACTCGCTGCATTTTTGCGCGGTAGTGGACAAG
                                                                                                                                                      CTCAACTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTG 513
                                                                                                                                                                                                    GTCAAAGTGTCCTGATGGCGATCTATGACACATTATTTAGCCAACTTGATGTAACGTCAT
                                                                                                                                                                                                                                      GTCAGAGTGGACTGATGGCTCTTTACGATATGTTTAACCAACTGGATGTCTCGTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTCTCTCTGTGAACAGGTGAAGCAACTGAATTTTCAAGGGTATGAGGTGATTCTGGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGCTCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCA 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCAAGGTGGGCACGGCTGTTGTCACTGGCATGAATGGCCGATTGGCCATGGGGAGGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGTGAATGGTGACAAGGGAGTGGTTTACACCCACAAGGATCTTCCTTTGCAATGAGGCA 2290
                   AGACTGTTTTTCACTGTTAGATCTTAAAGTAGTACCCTTATTTAATGAGAATGATGCCA 614
                                                                                                                                                                                                                                                                                                                                    GCTTTGCTGATCTGCAAAAGCCACACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTG 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGCCATGGAGACCGCCGATCCTGCCCGTGCATTCGTGAAGGACGTCAAGCGAATCATTA
                                                               ANACTGTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCA 573
                                                                                                                                                                                                                                                                                           GCTTCGCAGATCTGCAAAATCCTCAGATGAACTTTGATGGAAAGGCATGTGCTGCTGTTG 434
                                                                                                                                                                                                                                                                                                                                                                                     CCTCAGGAGCTGTTGGTGTTGGGAGGCAGAGGCTCCAATACCGTAAACTTATCCATAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCAAGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Mismatches 512; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 1386.8;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 12; Length 2566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                194
                                                                                                                                                                                                                                                                                                                                                                                       374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      254
                                                                                                             554
                                                                                                                                                                                                    494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  皮
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                  Ś
                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                           밁
Ş
                                              닭
                                                                                                                                  밁
                                                                                                                                                                         Ś
                                                                                                                                                                                                                            1515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1035
                                                                                                                                                                         1534 AGCTTGATGATGATTGATTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAA 1593
                                                                                                                                                                                                                                                                   1474 ATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAA 1533
1654 TTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATT 1713
                                                                                         1594 TCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATA 1653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             615 TCAGTACCCGGAGACAGCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTC 674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      574 TCAGCACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTT 633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAGCAGGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGG 693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGAAGCTGATGTAGCTGCGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGAT 1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGATATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGA 1113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGTTGCCGCAAGAGTTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAA 1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCTTTCACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGG 993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGTGGGTTTGCAACGGATAGCATCATTACAGTTCTCAAAGGCGAAAAGATCGGTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCAAGCTAAAGTGTCTGCTGCTGCTAATGCTGCATCAAAAGGTGTACCTGTTGTCATTG 914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGACAGCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTA 873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGGACTCTATAGTGGTCCACCAAGCGATCCTCAGTCAAAGATTATCCACACATATGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGGGTTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTA 753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGCAGCTCTGTTGGCAGCAGAACTTAATGCTGATCTTCTTATCATGCTTAGTGATGTGG 734
                                                                                                                                                                                                                            CTGTTGGCAAAAAGCTCATAGGCCTTGTGACTAGCAAAGAGGAAATTGCTGATCTAGTAG 1574
                                                                                                                                                                                                                                                                                                                                                               AAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTA 1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAAGGTGGAA 1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAAGCATATTGCCCCATTGGGTGTTCTTCTCATTATTTTTGAGTCTCGTCCTGATGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAAAACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCT 1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATA 1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGATTTTGCTAGATATTGCTGATGCTCTGGAAGCAAATGAGGATGCAATTAGGTCTGAAA 1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGTTGCGGCAAGACTGTTCGAGGCGTCTACAGAAGTTGTCATCAGAGGAACGCAAAC 1094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITTCCACAACGAAGCAAATTTGTGGGCATGTTCCAAGGAAGCTACAGCCCGAGAGATGG 1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAGTGGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTC 933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGAAAAGCATGGGAAGCTAATTAGTTTTGGAGAGAAGTCTAGTGTTGGAAGAGGTGGCA
                                              TCAAAGCAACAACTAAGATTCCAGTTTTAGGTCATGCTGATGGTATCTGCCATGTTTACA
                                                                                                                                     CGCTTGATGATGTAATTGATCTTGTCATTCCGAGAGGTAGTAAGTCTCTAGTTTCCCAAA
                                                                                                                                                                                                                                                                                                                   AAGAAGTTATGAGATCAAATGCAATATTACACAAGGTCATAACTGGAGTTATTCCCCGATA 1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGAGGACCCTATTTCCCCATACATTGAAAAGAACAGAGGTTGCTAAAGATCTGGTTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       теераденссствтвансся датасттана надасненее тестератентта сттесте
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGACCCTABAGCCAGGAAAGATAACAAATCTTGCAAGATCCATTCGTAAAACTGCTGACA 1274
                                                                                                                                                                                                                                                                                                                                                                                                             TGGTCCAGATTGCATCTCTAGCGATCCGAAGTGGTAATGGTCTCCTTTTGAAAGGAGGGA 1454
                                                                                                                                          1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              794
                                                  1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1394
```

Gaps

120

218 60

278

```
RESULT 7
US-09-938-842A-1866
; Sequence 1866, Application US/09938842A
; Patent No. US20020160378A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               日
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                          US-09-938-842A-1866
                                                                                                                                                                                                     NUMBER OF SEQ ID NOS: 5379
SEQ ID NO 1866
LENGTH: 2181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                     APPLICANT: Harper, Jeff
APPLICANT: Kreps, Joel
APPLICANT: Wang, Xun
APPLICANT: Zhu, Tong
APPLICANT: Zhu, Tong
TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
TITLE OF INVENTION: SAME, AND METHODS OF USE
FILE REPERENCE: SCRIP1300-3
CURRENT APPLICATION NUMBER: US/09/938,842A
CURRENT FILING DATE: 2001-08-24
PRIOR FILING DATE: 2000-08-24
PRIOR FILING DATE: 2001-01-16
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/300,111
PRIOR FILING DATE: 2001-06-22
NUMBER OF SEC IT NOC. 5270
                                                                                                                                 TYPE: DNA ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1695 TTGACADATCAGCCGACATGGATATGGCADADACGGATAGTATTGGATGCTDAGATTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2295 AATAACCTCCGTTGTGGTCGTAACGAATGGCTGGACTCCCCTTTTA 2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1894 CTATGGCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATC 1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1834 CTATTGCGCACAAAGCTCTGGGATTTCCAAAAGCTGTTTCATTTCATCATGAGTATAGTT 1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1815 AGGGACTTGATGATCTÄTTÄGTGGAACTTGÄAAAAGGÄAGGAGTAGTTATTTATGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1774 CAGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1755 ÁTCCÁGCAGCATGTÁÁTGCAATGGÁAÁCACTÁCTTGTTCÁTAAAGÁTCTTÁACAAGÁGTG 1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1714 ACCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTC 1773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGTGAATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAATGAGGTC 2253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACCAGTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCTGCAGCAAGTTGATAGTGCCGCTGTGTTTCATAATGCAAGCACAAGGTTTTGTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGTGAATGGTGACAAGGGAGTGGTTTACACCCACAAGGATCTTCCTTTGCAATGAGGCA 2294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAATGCTCCTTTTAGCCTGTTCAGGAGTAGGTGAATATCCTTTTAA 2299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GACCTGTTGGAGTTGATGGACTTCTAACTACTCGCTGCATTTTGCGCGGTAGTGGACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGACGCGTTTTTGGGCTAGGTGCTGAGGTTGGCATAAGTACAGAGCGCATACATGCCCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTATGGAAGTGCACACAGACTGCATCATCACAACTGATAGAAGTGCTGCAGAGGCCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAATGCCATGCACAGTCGAATTTGTTGATGATGTGCAGTCAGCTATCGATCACATAAATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGTTGCACATGACAAGTTGAAAGTACCAAAGGTAGACTCATTTCGTCATGAGTATAGCT
43.0%;
Score 1096; DB 9;
Pred. No. 2.6e-296;
                                  DB 9; Length 2181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                á
                                                                                                                                            밁
                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                  맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 1489; Conservative
   1021 TTAGATGTTGCTGCAGCACAAGAAGCTGGATATGAAGAGTCTTTGGTAGCTCGCTTAGTT 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 ATCTGTGAACÁGCTTGCGGÁGTTAAACTCAGATGGATTTGAGGTCATTTTTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99 ATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGGACGTGAAGCGCGTCATCAAG 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTGGGACTGCAGTTGTTACTGGGAAAGGTGGAAGATTGGCTCTTGGACGTTTAGGAGCT
                                                                    GCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACT 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGCTTGTGACCGATAGCAGTTTTAGAGATAAGGATTTCAGGAAGCAACTTAGTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGATTTACAGAAGCCACAAATGGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGATCTGCAAAAAGCCACAGATGGAGTTAGATGGAAAAGGCTTGTGCCGCTGTTGGTCAG 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGACGGAGATCGATCGTTCACGCGCGTTCGCCAAAGACGTTAAGCGTATCGTCGTCAAG
                                                                                                                                                                                                                 ттость датоттось датостто свессь в неговерентивать в сторожения в приметельного примет
                                                                                                                                                                                                                                                                                                                                                              GCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATA 1058
                                                                                                                                                                                                                                                                                                                                                                                                                                  CATCAAGATGCTCATTTATGGGCTCCGGTCGTAGATACTACTTCTCGTGACATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGATATGCAGCTGAGAATATAAGTAAAGTCCTTAGAGGACTGCGTGTTGGTACCCTGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTTGGTACTCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAAAAGTTAAAGCTGCTGTTAATGCAGCTTATGGTGGCGTTCCTGTTATCATAACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTCTTCTGTCGCTAGAGCTGAAAGCTGATCTTTTGATTCTTCTAAGTGATGTTGAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ęgacigtiegeaciegaacigaaagcigaiciccitaiiciecicagigaigiega
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTCGCAGAGCCCCTACAAGGATTCTACTGGTATATTTTTGGGATAATGACAGCTTAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCAAAGCGATGCTGAGGATGAGGGTTATTCCAGTTTTCAATGAGAATGATGCTATAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAAACT 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCAGTCTCATGGCTTACTATGAGACTATGTTTGACCAGTTGGATGTGACGGTTGCTCAA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAA 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTGCCGTTGGTCTTGGTCGACAAAGGCTTCGATACAGACAATTAGTCAACAGCAGTTTT
                                                                                                                                                    CTACACGACATTGCCAATGCCCTTGAAGTAAATGAGAAAACAATTAAAGCTGAGAATGAT 1020
                                                                                                                                                                                                                                                                                             GCTGCAAGGGAAAGCTCAAGAAAGCTTCAGGCCTTATCTTCAGAAGATAGGAAACAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         <u> AAACACCAGGACGAGATTACTTTTGGCGAAAAGTCCAAATTAGGACGAGGGGGTATGACT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches 655; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

638

540

578 420

480

818

660

960

900 998 840 938 780 878 720 758 600 300

8 8 8 8

Ś

Ş

В

S

장 유

밁

```
1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1081 ÁTGÁAGCCTGGGÁÁGÁTCTCÁÁGCCTTGCAGCTTCCGTTCGCCAGCTAGCCGÁAATGGÁÁ 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1419
                                                                                       2199 AATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTT 2242
                                                                                                                                                                                                                                                                                                                                                   1981 AGGTTCGGACTTGGTGCTGAGGTGGGAATAAGCACAAGCAGGATTCATGCCCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1959 GGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTA 2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1899 GCCTGCACTGTTGAGTTTGATGATGATGTTCAATCAGCAATTGACCATATTCATCGTTAT 1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1741 GCAAGTGCAAAACTGAATATTCCGGAAACAAAATCATTTCACCACGAGTACAGTTCCAAG 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1359
2101 GATGGAGACAATGGAATCGTTTACACCCATAAGGATCTTCCTGT 2144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACTCGACGAAAATCCCAGTGCTAGGCCATGCTGATGGAATCTGTCATGTATATGTTGAT 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCCACGTATATATTGAC 1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCGATGATCTTATTTATGTTCTGCAAACCAAAGGCGTCACTTTGTATGGTGGGCCCAAGA 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATT 1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGC 1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ÄAGTCTGGTAAACTGGACÄTGGCAAAGCGCATTGTTTCCGATGCAAAGTTGGACTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCA 1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGACGTTATTGATCTTGTGATCCCAAGAGGCAGCAACAAGCTTGTTTTCTCAAATAAAA 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAG 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAGGTAAACTCATAGGACTTGTGACCTCAAGAGAGGAGATTCCTGATTTGCTCAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTT 1538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTCGTCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCGGAGACTGTT 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGTATCTTCGCTTGCAATCCGGAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAA 1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATCCAATAGGCCGTGTATTAAAGAAAACTCAGGTTGCAGATGATCTTATTTTAGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAA 1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCCTTGCAAATATGGAA 1238
                                                                                                                                                                                                                                                            GTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTG 2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTGCACCGTTGAAATTGTAGAAGACGTATATGGTGCTATAGATCATATTCACCAACAT 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGCACAAAGCTCTGGGATTTCCAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATG 1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGCCTGTAATGCGATGGAAACCCTTCTTGTACATAAAGATTTGGAGCAGAATGGTTTT 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCTCATCACCAATAGGTGTTCTTCTGATTGTTTTTGAATCCCGGCCTGATGCACTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                            CGTTTTGGATTGGGTGGTGGGGATAAGCACAGGGGGTATCCATGCCCGTGGACCA 2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCCAAGTGGACAGTGCTGCTGTTTTCCACAATGCAAGCACAAGATTCTCTGATGGTTTT 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCT 2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAAGTGCACACTGATTGCATAGTGACGGAAGATAGTGAAGTAGCAGAAATATTCCTC 1920
                                                                                                                                                                         GTTGGAGTTGAAGGATTATTGACAACAAGATGGATAATGAGAGGAAAGGGACAAGTTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1358
                                                                                                                                                                              2100
                                                                                                                                                                                                                                                                                                                                                       2040
```

음 성

Ş

유

밁

밁

8 8 8 8 8 8 8 8 8

8 8

중 음 경

8 B

밁

```
Sequence 1866, Application US/0933842A

Publication No. US20040009476A9

GENERAL INFORMATION:
APPLICANT: Harper, Jeff
APPLICANT: Kreps, Jeff
APPLICANT: Wang, Xun
APPLICANT: Zhu, Tong
TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
TITLE OF INVENTION: SAME, AND METHODS OF USE
FILE REFERENCE: SCRIP1300-3

CURRENT APPLICATION NUMBER: US/09/938,842A

CURRENT PILING DATE: 2001-08-24

PRIOR APPLICATION NUMBER: US 60/227,866

PRIOR APPLICATION NUMBER: US 60/264,647

PRIOR APPLICATION NUMBER: US 60/264,647

PRIOR PILING DATE: 2001-01-16

PRIOR FILING DATE: 2001-06-22

PRIOR FILING DATE: 2001-06-22

PRIOR FILING DATE: 2001-06-22

PRIOR FILING DATE: 2001-06-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 8
US-09-938-842A-1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-938-842A-1866
S
                                            밁
                                                                                    Ş
                                                                                                                                      밁
                                                                                                                                                                                 Ś
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 5379
SEQ ID NO 1866
LENGTH: 2181
TYPE: DNA
ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 1489;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Loca1
                                                                                                                                                                                                                                                                                                                                                                            459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  339
                                                                                                                                                                                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121
                                               541
                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                            361 ATGCTTGTGACCGATAGCAGTTTTAGAGATAAGGATTTCAGGAAGCAACTTAGTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              279
                                                                                                                                                                                                                                   421 GTCAAAGCGATGCTGAGGATGAGGGTTATTCCAGTTTTCAATGAGAATGATGCTATAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      219 CTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCA 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  159 GIGGGCACIGCAGITGICICCAGACAAGAIGGAAGAIIGGCIIIGGGCAGGGIIGGAGCI 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 GTTGGGACTGCAGTTGTTACTGGGAAAGGTGGAAGATTGGCTCTTGGACGTTTAGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99 АТСССЕТСЕЛССТССТССССЕЛССТССТСТСТСТСАССЕТСАЛССТСАЛСАТСАТСАЛСА
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ATGACGGAGATCGATCGTTCACGCGCGTTCGCCAAAGACGTTAAGCGTATCGTCGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCTGTGAACAGCTTGCGGAGTTAAACTCAGATGGATTTGAGGTCATTTTGGTGTCATCT 180
                                                                                                                                                                                      ACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCA 638
                                                                                                                                                                                                                                                                                                                                                                         CTTCTTGTCACCGACAGTGATTTTGAGAACCCCAAAGTTCCGGGAGCAACTCACTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAA 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAGATTTACAGAAGCCACAAATGGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTGATCTGCAAAAGCCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAG 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTGCCGTTGGTCTTGGTCGACAAAGGCTTCGATACAGACAATTAGTCAACAGCAGTTTT
TTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAAATCATACACACTTATATTAAAGAA 758
                                               GCTCTTCTGTCGCTAGAGCTGAAAGCTGATCTTTTGATTCTTCTAAGTGATGTTGAGGGC 600
                                                                                            GGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGG
                                                                                                                                           ACTOGOAGAGOCOCOTACAAGGATTOTACTGGTATATTTTTGGGATAATGACAGOTTAGOC 540
                                                                                                                                                                                                                                                                             GTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGC 578
                                                                                                                                                                                                                                                                                                                                                                                                                         AGCAGTCTCATGGCTTACTATGAGACTATGTTTGACCAGTTGGATGTGACGGTTGCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTGCTGTTGGAGTGGGGGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTT 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           43.0%; Score 1096; DB 11; ilarity 69.4%; Pred. No. 2.6e-296; Conservative 0; Mismatches 655;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 2181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                . 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      158
                                                                                                                                                                                                                                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                                                   518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60
```

정 음 정

Ś

밁

8 8 8 8

밁

```
1179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1021 TTAGATGTTGCTGCAGCACAAGAAGCTGGATATGAAGAGTCTTTGGTAGCTCGCTTAGTT 1080
1779 CTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTTATGGTGGACCTATT 1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1059 TTGCTAGATGTTGCAGATGCTTTGGAGGCCAAATGAGGATTTAATAAGGTCTGAGAATGAA 1118
                                                                                                                                                                                       1719 GCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGC
                                                                                                                                                                                                                                                                                                                                   1659 APATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCA 1718
                                                                                                                                                                                                                                                                                                                                                                                                                      1501 AACTCGACGAAAATCCCAGTGCTAGGCCATGCTGATGGAATCTGTCATGTATATGTTGAT 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGAC 1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACT 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAACACCAGGACGAGATTACTTTTGGCGAAAAGTCCAAATTAGGACGAGGGGGTATGACT
                                                                                                               GCAGCCTGTAATGCGATGGAAACCCCTTCTTGTACATAAAGATTTGGAGCAGAATGGTTTT 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGACGTTATTGATCTTGTGATCCCAAGAGGCAGCAACAAGCTTGTTTCTCAAATAAAA 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAG 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTT 1538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTT 1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGGTATCTTCGCTTGCAATCCGGAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAA 1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCTCATCACCAATAGGTGTTCTTCTGATTGTTTTTGAATCCCGGCCTGATGCACTTGTT 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTTGAGTCCCGACCTGATGCCTTGGTT 1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATCCAATAGGCCGTGTATTAAAGAAAACTCAGGTTGCAGATGATCTTATTTTAGAGAAG 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAA 1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGAAGCCTGGGAAGATCTCAAGCCTTGCAGCTTCCGTTCGCCAGCTAGCCGAAATGGAA 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAA 1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTACACGACATTGCCAATGCCCTTGAAGTAAATGAGAAAAACAATTAAAGCTGAGAATGAT 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTGCAAGGGGAAAGCTCAAGAAAGCTTCAGGCCTTATCTTCAGAAGATAGGAAAACAAATT 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATA 1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATCAAGATGCTCATTTATGGGCTCCGGTCGTAGATACTACTTCTCGTGACATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGATATGCAGCTGAGAATATAAGTAAAGTCCTTAGAGGACTGCGTGTTGGTACCCTGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTTGGTACTCTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAAAAGTTAAAGCTGCTGTTAATGCAGCTTATGGTGGCGTTCCTGTTATCATAACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ĠĠAĠĠŦĀĀĀĊŦĊĀŦĀĠĠĀĊŦŦĠŦĠĀĊĊŦĊĀĀĠĀĠĀĠĀŦŦĊĊŦĠĀŦŦŦĠĊŦĊĀĀĠĊŦŦ 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTCGTCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCGGAGACTGTT
                                                                                                                                                                                                                                                                       AAGTCTGGTAAACTGGACATGGCAAAGCGCATTGTTTCCGATGCAAAGTTGGACTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        660
```

8 B 8

밁

성 유

S

성 유

B

청 음 성

```
PRIOR APPLICATION NUMBER: US 60/227,866
PRIOR FILING DATE: 2000-08-24
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR FILING DATE: 2001-01-16
PRIOR APPLICATION NUMBER: US 60/300,111
PRIOR FILING DATE: 2001-06-22
NUMBER OF SEQ ID NOS: 5379
SEQ ID NO 1391
LENGTH: 2154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 9
US-09-938-842A-1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                띩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                皮
                                                                                           밁
片
                                 Ś
                                                                                                                                       Ś
                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                         US-09-938-842A-1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1391, Application US/09938842A Patent No. US20020160378A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                      Matches 1484; Conservative
                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Wang, Xun
APPLICANT: Zhu, Tong
TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
TITLE OF INVENTION: SAME, AND METHODS OF USE
FILE REFERENCE: SCRIP1300-3
CURRENT APPLICATION NUMBER: US/09/938,842A
CURRENT FILLING DATE: 2001-08-24
CURRENT FILLING DATE: 2001-08-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Harper, Jeff
APPLICANT: Kreps, Joel
                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: DNA ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2101 GATGGAGACAATGGAATCGTTTACACCCATAAGGATCTTCCTGT 2144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1681 CTCGATGATCTTATTTATGTTCTGCAAACCAAAGGCGTCACTTTGTATGGTGGGCCAAGA 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2199 AATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTT 2242
121
                                                                                                                                          159 GTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCT 218
                                                                                             61
                                                                                                                                                                                                                                          99 ATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCAAG 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCA 2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCT 2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAAGTGCACACACTGATTGCATAGTGACGGAAGATAGTGAAGTAGCAGAAATATTCCTC 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTGGAGTTGAAGGATTATTGACAACAAGATGGATAATGAGAGGAAAGGGACAAGTTGTG 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGTTCGGACTTGGTGGTGGGGAATAAGCACAAGCAGGATTCATGCCCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCTGCACCGTTGAAATTGTAGAAGACGTATATGGTGCTATAGATCATATTCACCAACAT 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTAT 1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAAGTGCAAAACTGAATATTCCGGAAACAAAATCATTTCACCACGAGTACAGTTCCAAG
ĊŢĠŢĠŢĠĀĀĊĀĠĊŢŢĠĊĠĠĀĀŢŢĀĀĀĊŢĊĠĠĀŢĢĠĀŢŢŢĠĀĠĠŢĠĀŢĀŢŢĠĠŢĠŦĊĀŢĊŢ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGCCAAGTGGACAGTGCTGTTTTCCACAATGCAAGCACAAGATTCTCTGATGGTTTT
                                         CTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCA 278
                                                                                             GTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA 120
                                                                                                                                                                                           ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG 60
                                                                                                                                                                                                                                                                                    42.6%; Score 1085.6; DB 9; Length 69.1%; Pred. No. 2.1e-293; ative 0; Mismatches 664; Indels
                                                                                                                                                                                                                                                                                                                                        Length 2154;
                                                                                                                                                                                                                                                                                              ,
,
                                                                                                                                                                                                                                                                                              Gaps
     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1800
                                                                                                                                                                                                                                                                                                 0
```

유 상 음

Ş

```
1021
                                                                                                                        1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661 AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAA 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGATCTGCAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAG 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ĠĠŦĠĊĠĠŦŦĠĠŦĊŦŦĠĠĊĄĠĠĊĄĄĄĠĠĊŦŤĊĠŦŦĄŦĊĠĄĊĄĄŦŦĄĠŤĊĄĄŦĄĠĊĄĠĊŦŦŤ 240
                                                          ACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTT 1358
                                                                                                                                                                                                                                                                                                                                                                                      TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACT 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAA 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTAGAAAGGCTCCATATGAGGATTCATCTGGGTATATTCTGGGATAATGACAGTTTTAGCA 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACT 518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           egrecrerregaeregeceacaeceacrraegraecegaaecrrercaaraecaecrr
ACCTCATCACCÁTTAGGCGTACTTCTGATTGTTTTTGAATCCCGÁCCTGÁTGCACTTGTA 1260
                                                                                                                        GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG
                                                                                                                                                                                  GACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAA 1298
                                                                                                                                                                                                                                                       ATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAA 1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAGATA 1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          938
                                                                                                                                                                                                                                                           1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  540
```

```
片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                   Ś
                                                                                 β
                                                                                                                     Ś
                                                                                                                                                            밁
                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1479
                                                                                                                                                                                                                                                                                                                                1861
                                                                                                                                                                                                                                                                                                                                                                                                                  1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1419 GCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1359 САGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGTGGAAAAGAA 1418
                                                                                                                                                                 1981
                                                                                                                                                                                                                                                1921
                                                                                                                                                                                                                                                                                        2019
                                                                                                                                                                                                                                                                                                                                                                          1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1501 ANTACTACAAAANTCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1261 CAGATAGETTEACTTGECATECGTAGTGGAAATGGTETTETGETGAAGGGTGGAAAGGAG 1320
2101 GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAA 2148
                                       2199 AATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAA 2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGAC 1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT
                                                                                                                       GIGGGIGITGAAGGICTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGIG 2198
                                                                                                                                                                                                                                                                                                                                                                                                                  GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATT 1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGC 1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCA 1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACCAAGCTTGTTACTCAGATAAAA 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAG 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTT 1538
                                                                               GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTC
                                                                                                                                                                 CGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                CGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC 1980
                                                                                                                                                                                                                                                                                      сесаваеттватаетестетатттсатаатесаастасваваттстстватеввест
                                                                                                                                                                                                                                                                                                                                    ĠĠĠĀĠŦĠĊĀĊĀĊĀĊĀĠĀĊŦĠĊĀŦŦĠŦĠĀĊĀGAĞĀŦĊĀĊĠĀĀGŦŦGĊĀĢĀGCŦĀŦŦĊĊŦŦ 1920
                                                                                                                                                                                                                                                                                                                                                                        GGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTA 2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCTGCACTGTTGAGTTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTAT 1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ĊŢŢŖŖŢĠŖĠĊŢŦŖŢŦŢŢŢĠĊŢĊŢĠĊŖĠŖĠĊĸŖŢĠĠŖĠĠŖĠĊĸŖĠĠ 1740
                                                                                                                                                                                                      CGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1478
                                                                                        2100
```

```
RESULT 10
US-09-398-842A-1391
; Sequence 1391, Application US/09938842A
; Nublication No. US20040009476A9
; CEMERAL INFORMATION:
   APPLICANT: Harper, Jeff
   APPLICANT: Kreps, Joel
; APPLICANT: Kreps, Joel
; APPLICANT: Zhu, Tong
; TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
; TITLE OF INVENTION: SAME, AND METHODS OF USE
; TILE REFERENCE: SCRIP1300-3
```

Ś

片

S

청 유

밁

8

밁

S

음 성 음

片

Ś В \$ В Ś 밁 Ś 밁 Ś 片 Ś 밁 Ś 밁 Ş 밁 Ş 밁 S

```
CURRENT APPLICATION NUMBER: US/09/938,842A
CURRENT FILING DATE: 2001-08-24
FRIOR APPLICATION NUMBER: US 60/227,866
PRIOR FILING DATE: 2000-08-24
PRIOR PELICATION NUMBER: US 60/264,647
PRIOR PILING DATE: 2001-01-16
PRIOR APPLICATION NUMBER: US 60/300,111
PRIOR APPLICATION NUMBER: US 60/300,111
PRIOR APPLICATION NUMBER: US 60/300,111
PRIOR FILING DATE: 2001-06-22
NUMBER OF SEQ ID NOS: 5379
SEQ ID NO 1391
LENGTH: 2154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TYPE: DNA; ORGANISM: Arabidopsis thaliana US-09-938-842A-1391
                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                           뎞
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                             Ş
                                                                                                                                                                                                       멼
                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                              Ś
                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 42.6
Best Local Similarity 69.1
Matches 1484; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                           541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      399.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        219
                                 879
                                                                                            721
                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                  759
                                                                                                                                                                                                                                                                                                                            601
                                                                                                                                                                                                                                                                                                                                                                                699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ч
GGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTT 938
                                                                                                                                                GCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGT 878
                                                                                                                                                                                                                                                                                                                            CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAA 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTGATCTGCAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAG 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ĠŢŢĠĠĠĀĊĀĠĊĀĠŢŢĠŢŢĀĊŢĠĠĀĀĀĀĠĠŢĠĠĀĀĠĀŢŢĠĠĊŢĊŢŢĠŢĊĠŢŢŢĀĠĠĀĠĊĀ 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCT 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAG
                                                                                            GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT
                                                                                                                                                                                                          AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACT
                                                                                                                                                                                                                                                               ттотатастостоскоскают сваескат сатемалатся такасасттататта вавеа. 758
                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTCTACTGGCGTTGGAAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGT 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGG 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCA 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              42.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 1085.6; DB 11; Length 2154; Pred. No. 2.1e-293; 0; Mismatches 664; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                               780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            338
                                                                                                                                                                                                                                                                                                                                  660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                       Ś
                                                                                                                             밁
                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
               밁
                                                                                                                                                                                  á
                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1479
                                                                      1959
                                                                                                                                                                                                                                               1741
                                                                                                                                                                                                                                                                                                                                                              1681
                                                                                                                                                                                                                                                                                                                                                                                                                     1779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1659 АЛАТСАВСТВАСАТВВАТАТВВСААЛАСТТАТТВТААТВВАТВСААЛАЛАСТВАТТАСССА 1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1539 GATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAG 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1561 AAGGCTTGTGATACGGATATGGCAAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1501 AATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        781 GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTTGGAACCTTGTTT 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gcagccrgcaargcaarggagaccrracragrrcaraaggarcrrargaagagrccaggc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCCACGTATATATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTT 998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAA 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTT 1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTA 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTT 1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAA 1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATATGGAA 1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACT 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAA 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ĠĊŢĠĊĠĀĠĠĠĀĀĀĠŢŢĊĊĀĠĀĀĀĠĊŢŢĊĀĠĠĊĊŢŦĀŢĊŢŢĊĠĠĀĀĠĀĊĀĠĠAĀĀĀĀĀĀĀŦŢ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATA 1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT
               GGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT 1920
                                                                GGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTA 2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTT 1538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        САGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAA 1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     дестделеттельная стрательная самета в праводения в прав
                                                                                                                                                                                                                                               GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
                                                                                                                                                                                                                                                                                                GCGCACAAAGCTCTGGGATTTCCAAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATG
                                                                                                                                                                                                                                                                                                                                                              CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ĠĊĀĠĊĊŢĠŢĀĀŢĠĊĠĀŢĠĠĀĀĀĊĊĊŢŢĊŢŢĠŤĠĊĀŤĀĀĠĠĀŢĊŢĀĠĀĠĊĀĠĀĀŤĠĊŢĠŢĠ
                                                                                                                                 GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                  СТТGАСGАСАТАТТАGТАGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATT 1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1380
                                                                                                                                    1860
                                                                                                                                                                                                                                                                                                             1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1440
                                                                                                                                                                                                                                                        1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1560
```

```
RESULT 11
US-10-026-767-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
Ş
                                         片
                                                                                 Ś
                                                                                                                                  片
                                                                                                                                                                       Ś
                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                  US-10-026-767-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILE REFERENCE: NTOLDO353
CURRENT APPLICATION NUMBER: US/10/026,767
CURRENT FILING DATE: 2001-12-27
NUMBER OF SEQ ID NOS: 3
SEQ ID NO 2
LENGTH: 2571
TYPES - ****
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 2, Application US/10026767
Publication No. US20030014774A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                         Matches 1484;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Japan International Research Center for Agricultural Science APPLICANT: Bio-oriented Technology Research Advancement Institute (BRAIN) TITLE OF INVENTION: Transgenic rice plant and its family with environmental TITLE OF INVENTION: stress resistant by proline accumulation of high level and TITLE OF INVENTION: production.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Hitachi, LTD. APPLICANT: RIKEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCATION: 107...2260
AUTHORS: Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko AUTHORS: Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko AUTHORS: Wada, Tsuyoshi Mizoguchi, Kazuko Yamaguchi-Shinozaki, Keishiro AUTHORS: Wada, Yoshinori Harada, Kazuo Shinozaki
TITLE: Correlation between the induction of a gene for 1-
TITLE: pyrroline-5-carboxylate synthetase and the accumulation of TITLE: proline in Arabidopsis thaliana under osmotic stress.

JOURNAL: The Plant Journal
                                                                                                                                                                                                                                                                                                                                                                                                             DATE: 1995-01-20
DATABASE ACCESSION NUMBER: D32138
DATABASE ENTRY DATE: 1994-07-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PAGES: 751-760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Arabidopsis thaliana FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2101 GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAA
                                                                                                                                                                            159
                                                                                                                                                                                                                      107
                                                                                                                                                                                                                                                               99
                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAA 2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGCCAAGTGGATAGCGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCT 2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGTTTTGGATTGGGTGGTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCA 2138
                                                                                                                               GTTGGGACAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA
                                                                                                                                                                                                                                                           ATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGGACGTGAAGCGCGTCATCATCAAG
  GGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTT
                                                                                                                                                                         GTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCT 218
                                                                                                                                                                                                                      ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG
                                                                                   CTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCA 278
                                            CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT 286
                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                              42.6%; Score 1085.6; DB 14; Length 2571; 69.1%; Pred. No. 2.4e-293;
                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                            Mismatches 664;
                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2040
                                                                                                                                                                                                                          166
                                                                                                                                                                                                                                                                  158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                               S
                                                                                                                                                              밁
                                                                                                                                                                                                 S
                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                           1067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1007
                              1359 CAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAA 1418
                                                                                                                                                           1247
                                                                                                                                                                                                                                                                                                                                                                             1119 GCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTCTACTGGCGTTGGAACTGAAGCTGATCTTCTGATTCTTGAGCGATGTTGAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGATCTGCAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAG 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gcaaaagreaagecrecrercrescrreacaaaraecescaccaccrerecratracaaer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGATGATTATTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  СТТСТТСТСАСССВАСАСТСТТТСВАСААСССВАВАСТТСССССВАВССТСВАВАСТ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                         CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG 1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAA
                                                                                                                                                              GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG
                                                                                                                                                                                                                                                                                         ATAMACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAA
                                                                                                                                                                                                                                                                                                                                     TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAA: 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACT
                                                                            ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTA
                                                                                                                  ACATOTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTT 1358
                                                                                                                                                                                                     GACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAA 1298
                                                                                                                                                                                                                                                 1306
                                                                                                                                                                                                                                                      1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         518
```

```
RESULT 12
US-10-260-238-466
                       APPLICANT: Budworth, Paul R.
APPLICANT: Moughamer, Todd G.
APPLICANT: Mriggs, Steven P.
APPLICANT: Cooper, Bret
APPLICANT: Glazebrook, Jane
APPLICANT: Glazebrook, Jane
APPLICANT: Katagiri, Fumiyaki
APPLICANT: Katagiri, Fumiyaki
APPLICANT: Katagiri, Joel
                                                                                                                                                                                                                                                                                  Sequence 466, Application US/10260238 Publication No. US20040016025A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1607 AATACTÁCAÁÁAATCCCTGTGCTAGGTCÁTGCTGATGGAÁTCTGTCATGTATATGTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1539 GATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAG 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1367 CAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG 1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2199 AATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAA 2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATT 1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTT 1538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTT 1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGC 1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGGCTTGTGATACGGATATGGCAAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTGCACTGTTGAGTTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTA 2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAAGAAGCTTGTTACTCAGATAAAA 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAA 2254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTG 2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGCCAAGTGGATAGCGCTGCTGTTCCACAACGCCAGCACGAAGATTCTCAGATGGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCT 2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCA 1718
Provart, Nicholas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Zhu, Tong
TITLE OF INVENTION: PROMOTERS FOR REGULATION OF PLANT EXPRESSION
FILE REFERENCE: 60111-NP
CURRENT APPLICATION NUMBER: US/10/260,238
CURRENT FILING DATE: 2002-09-26
PRIOR APPLICATION NUMBER: US 60/325,448
PRIOR APPLICATION NUMBER: US 60/325,277
PRIOR APPLICATION NUMBER: US 60/325,277
PRIOR APPLICATION NUMBER: US 60/325,277
PRIOR APPLICATION NUMBER: US 60/370,620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                         밁
                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-260-238-466
                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 42.4%; Score 1079.6; DB 15; Length 2214; Best Local Similarity 73.5%; Pred. No. 1.1e-291; Matches 1627; Conservative 0; Mismatches 474; Indels 113; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
ORGANISM: Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 2214
                                                                                                                                                                                                                                   646
                                                                                                                                                                                                                                                                                                   668
                                                                                                                                                                                                                                                                                                                                                                586
                                                                                                                                                                                                                                                                                                                                                                                                                             809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              156
      788 CAAATCTCGTGTAGGTAGAGGGAGGCATGACAGCAAAAGTGAAAGGCTGCTCTTGGCTTC 847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96 GCCATGGCGAGGGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATC 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ភូ
                                                                                                         ATCGAAGATTATCCACACATACGTCCATGAACAACATGGGAAGTTAATTAGCTTTGGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCAAGTTTTGGGAACCAGCTCCGCGAGACTGTTAATTCTCTGTTAGATCTCAAGGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCATTATTAGATCTTAAAGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCAATAGCAGGTTGCAGAGAGAGTTTCGCTGATCTGCAGAACCCCACAGATGGACATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCAGGGTTGGAGCTCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTG 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGTTAATTCGACAGGTCGGCACCGCTGTTGTGACTGGGCCGAATGGCCGGTTGGCTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACGTGGAGAACACCGACTCCACCCGCGCTTCGTCAAGGACGTGAAGCGCATCATCATC
                                                                                                                                                                                                                                                                                                                                                                                                                      TGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTGGCACTGGAAACTGAAAGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCAGTATTTAATGAGAATGACGCCATCAGTACCAGGAGGCAACCATACGAGGATTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TA---ACCAACTGGATGTCTCGTCATCTCAACTTCTTGTCACCGACAGTGATTTTGAGAA 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGGGAAGGCCTGCGCTGCCGTCAGAGTGTGCTGATGGCGATCTATGACACGTTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTGATGGCTCTTTACGATATGTTGTT 430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCAATAGC-----AGCTTTGCTGATCTGCAAAAGCCACAGATGGAGTTAGA 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTCTGGTCACCTCTGGTGCTGTTGGTGTTGGGAGGCAGAGGCTCAAGTACCGGAAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTTTGGTCACCTCAGGTGCTGTTGGAGTGGGGGGCGACAGCGACTTAGGTACCGGAAGCTT 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCAGGCTCGGTGCTCTGTGTGAACAG-----CTAAATTTTGAGGGGTACGAGGTG
                                                                                                                                                                  ATCAAAAATCATACACACTTATATTAAAGAAAAGCATCAGCAAGAAATCACTTTTGGAGA 787
                                                                                                                                                                                                                                                                                                TCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGTGGTCCACCAAGTGAACCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAGGCTCCATATGAGGATTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAGCCAGCAGCTTGACGTAACATCATCTCAGCTTCTTGTTACGGATCGTGATTTTATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A-----AGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTG
                                                                                                                                                                                                                                      TOTOCTTATCATGOTCAGTGATGTGGAGGGGCTCTATAGCGGTCCACCTAGCGATCCACA 705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ricke, Darrell
                                                                                                                                                                                                                                                                                                                                                                   TGGCATATTCTGGGATAACGATAGTTTGGCCAGACTGTTAGCGCAAGAACTTAAAGCTGA
```

465

645

585 607 525 547 345

285

225

405

114

203

174

밁 Ś 밁 Ś 밁 Š 밁 Ś 밁 δ 밁 Ś g S 밁 Ś 뮍 Ś 밁 á 밁 á 밁

밁 á 망 8

Ś 맑

```
1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1143 GCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAAGC 1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1006 CAGCAGAAATTGTCGTCTGAGGAGCGTAAGAATTTTGCTAGACATCGCCGATGCTCTA 1065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1026 --- CAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGATGTTGCAGATGCTTTG 1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1489
1808 CACTTTGAAACTACCAAAGGTAGATTCATTCATCATGAGTATAACTCAATGGCATGCAC
                                                   1847 AGCTCTGGGATTTCCAAAAGCTGTTTCATTCATCATGAGTATAGTTCTATGGCCTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                826 ATCAAAAGGAATACCTGTTGTAATTGCCAGAGTGGATTTGCAATCGATAGCATTATTAAG 885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAATCTCGTGTGGGAAGAGGTGGAATGCAAGCTAAAGTAGCAGCTGCTTTTACTGCTTC 825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAATTGTTTTTGAGTCCCGACCTGATGCCTT-----GGTTCAGATTGCATCTTTGGCA 1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAAGCAAATGAAGATCTAATTACATCCGAGAACCAAGCTGATCTGGATTTGGCGCAAGAT 1125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGATTGTTCAAGGCATCTA 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAATAGCGGCACACCTGTGGTTATTAC--AAGTGGGTTTGAAAATCGGAGCATTCTTAAA 905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>ÁTACTGCÁTÁAGGTATTATGGTCÁTÁACTGGTGCAÁTTTCCAGATGTTGTTGGTAAAAAAC</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTAATTATTTTTGAGTCCCGTCCTGATGCCTTGGTACAGGTACAGATTGCATCTTTAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAACAGAG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCCATTAGGTGTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCGCAGGATCAATTCGTGAAATCGCTGATATGGAGGACCCTATTTCCCCATACACTGAAA 1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTAAA 1262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTGGTTACGATAAATCATTGGTTGCTCGGATGACCATAAAGCCAG--AAGATAAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAGTT 1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCCAAGGAAGCAACAGCGCGTGAGATGGCCGTTGCTGCAAGAGATTGCTCCAGACATCTA 1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCATGCGAGGAGAGAAAATCGGTACGCTTTTCCATAGGGAAGCAAACCAGTGGGGTTGT 945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTCTTCATGGGGAAAAATTGGTACTCTCTTTCACAAGAATGCGAATTTGTGGGAATCA 965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTATTGGCCTAGTGAAAAACAAAGATGAAATTGCTGATTTGCTCAAGCTTGATGATGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATATTGCATAA-----GGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAAC 1488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCCGAAGTGGAAATGGTCTTCTCTTGAAAGGAGGAAAAGAAGCTATGAGATCAAACACA 1387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACG 1436
                                                                                                                                                                                                                       ATATTAGTAGCACTAAAAACAGAAGGAGTTA-ATATTTATGGTGGACCTATTGCGCACAA 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACATGGACATGGCAAAACGTATTGTATTGGACGCAAAGGTTGATTATCCAGCAGCGTGT 1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGATTCCTGTTCTTGGGCATGCT-GATGGTATATGCCACGTATATATTGACAAATCAGCT 1667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCA 1548
                                                                                                                                                                                                                                                                                               AATGCCATGGAAACGTTACTTGTTCATAAAGATCTGAACAGGACAGAAGGCCTTGACGAT 1747
                                                                                                                                                                                                                                                                                                                                                                       AATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGAC 1787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCCTGC 1727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGATTCCTGTTCTTGGTCATGCTGGACGGTATCTGCCATGTTTATATTGACAAATCAGCT 1627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGATCTTGTAATACCAAGAGGTAGCAATAAGCTCGTTTCCCAGATCAAAGCAGCAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TIGATOTIGICACICCAAGAGGAAGTAATAAGOTIGICTCICAAATCAAGGCGTCAACIA 1608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----CCATTGGGTGTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1567
       1867
                                                                                                                                                       1807
                                                                               1906
```

밁 ঠ 밁 Ś 밁 Ş 밁 Ś 밁 Ś 밁 Ś 밁 Ş 맑 8 밁 Ś 片 Ş 밁 Ś 밁

S

\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$

á

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                             닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
  문
                              Ś
                                                                                 밁
                                                                                                                        S
                                                                                                                                                                     밁
                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-10-424-599-44242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 13
US-10-424-599-44242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: La Rosa Thomas J
APPLICANT: Kovalic David K
APPLICANT: Xovalic David K
APPLICANT: Zhou Yihua
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53223)B
CURRENT APPLICATION NUMBER: US/10/424,599
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 44242
LENGTH: 2499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 44242, Application US/10424599
Publication No. US20040031072A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 1509;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OTHER INFORMATION: Clone ID: PAT_MRT3847_139949C.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Glycine max FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match 42.2%;
Local Similarity 69.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1868 CCTCGAATTTGTTGATGATGTGCAGTCAGCAATTGACCATATAAATCGCTATGGAAGCAT 1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1907 TGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGA-----
  299
                                                                                                                                                                                                                                                           119 GTTGGGACTGCTGTGGTCACTCGCCAAGATGGAAGGTTAGCTGTTGGAAAATTAGGGGCA
                                                                                                                                                                                                                                                                                                                                                                                      99 ATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAG 158
                                                                                                                                                                                                                                                                                                                                                 59 ATGGAGAACACAGATCCTTGTAGACATTTTCTCAAGGATGTTAAGCGCATCATAATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGAATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTCGCTTTGGTCTAGGTGCTGAGGTTGGCATAAGCACAGGGCGCATACATGCTCGGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCAGTGCACACACAGATTGCATTATCACTACTGATGGAAAGGCAGCAGAGACTTTTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ---AGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTA 2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGAACGGCGACAAGGGAGTTGTTTACACCCACAGGGAGCTCCCTTTGCAGTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGTTGGCGTTGATGGACTCCTAACAACTCGA----TGCGAGGAAGTGGACAAGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAGCAAGTTGATAGAGTGCTGCGGTATTCCATAATGCAAGCACACGGTTCTGTGATGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGCAGAGTTGAT -- AGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGG
GCTGACCTTCAGAAGCCGCAAGTTGAACTTGATGGCAAGGCTTGTGCTGCTGTTGGACAA
                                                                                                                           GGTGCTGTTGGAGTGGGGGGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTT 338
                                         GCTGATCTGCAAAAAGCCACAGATGGAAGTTAGATGGAAAAGGCTTGTGCCGCTGTTGGTCAG 398
                                                                                     GIGGGCACIGCAGIIGICICCAGACAAGAIGGAAGAIIGGCTIIGGGCAGGGIIGGAGCI 218
                                                                                                                                                                         CTCTGTGAGCAGATTAAGGAGCTGAATTCTCTTGGTTATGAGATTATTTTGGTGTCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1076.8; DB 12; Length 2499;
Pred. No. 7.1e-291;
0; Mismatches 612; Indels 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels 45; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2107
                                                                                                                                                                                                                                                                    178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2076
      358
                                                                                                                                                                                238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2160
```

Ś

유정

맑

S

Š Å

밁

```
1019
1479 GGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTT 1538
                                                          1361
                                                                                                                                                                                                                                             1359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1239 GACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTAGTTCTTGAGAAA 1298
                                                                                                                                                                                                                                                                                                                                                                  1299 ACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTT 1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1059 TTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAA 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       599
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             399
                                                                                                                                                                                                                                                                                                                                                                                                                                GATCCAATTGGTCGAGTGTTAAAACGAACTGAGCTTGCAGAGGGGGCTGATTTTGGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACT 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGT 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGCATCAAAGTGAAATTACTTTTGGAGACAAGTCTAGAGTGGGAAGAGGTGGAATGACT 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGACTGTTGGCACTGGAAAGCTGAACTGATCTCCTTATTCTGCTCAGTGATGTGGATGGG 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGAAATCATTGTTAGCATTAAAAGTTATTCCCATATTCAACGAGAACGATGCAGTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACAGCCTTATGGCTCTTTATGATGTTTTGTTTAGTCAGCTGGATGTGACATCTGCTCAG 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAA 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATA 1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATAAAGATGCACATAAATGGGCCCCGGTAAAAGAGGTTGATGCTCGTGAGATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTTATGCAGCTGAAAATATCATTAAAGTTCTCCAAGGACAACGGATTGGAACCCTCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGTTTGAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTT 938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTAAAGTAAAGGCTTCTATTCATGCAGCTGAAGCTGGCATTCCTGTTATCATTACTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACTAGGAAAGCTCCATATGAGGATTCTTCTGGCATATTTTGGGATAATGACAGTTTATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTCTTGTGACGGACAATGATTTTAGAGACAAAGATTTCAGAATGCAGCTCAGCGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACT
                                                          GCTAAGCGATCAAATGCAATTTTGCACAAAGTAATTACTGAAGCCATACCAGATATTGTT
                                                                                                                     GCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTT
                                                                                                                                                                                      CAGATAGCTTCTTTGGCAATCCGAAGTGGGAATGGGCTTCTCTTGAAAGGAGGCAAGGAG 1360
                                                                                                                                                                                                                                          CAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAA 1418
                                                                                                                                                                                                                                                                                                           ACATCATCTTCTTTAGGAGTTCTTTTAATTGTTTTTTGAGTCTCGCCCTGATGCACTAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGATGTTGCTGATGCAAAAGAAGCAGGATATGAAAAATCCTTGGTTGCTAGACTGCTT 1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGCTAAAAATAGCTGATGCCCTGGAAGCACATCAAAATGAGATCAGGATTGAAAATGAA 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAGCTÁGGGÁCTGTTCCÁGACGGCTTCÁGGCCTTATCTTCÁGÁAGAGAGAGAAACAAATT 1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -GCAAGCCTTGCTAACAACATTCGAATTATTGCAAACATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       518
                                                                                                                                                                                                                                                                                                                                                                                                                                1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             478
                                                             1420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            758
```

Ś

8 8

S

정 음 성

Ś

뮍

ঠ **ਨ** ১

멼

밁

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                닭
                                                                                                                          Ş
                                                                                                                                                                     맑
                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               먉
                                  δ
                                                                                                                                                                                                                                                                                                                                              1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1841 GCATGCACAGTTGAAATTGTGGATGATGTTTATGCAGCTATTGATCATATAAATCTTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1601
                                                                                                                                                                     2081
                                                                                                                                                                                                                                                                                                                                                                                       1992 GATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAAT 2051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1541 AGTTCCACTAAAATTCCTGTCCTGGGTCATGCAGATGGAATTTGTCATGTCTATGTTGAT 1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1539 GATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1421 GGCTCAAAACTTATTGGACTTGTGACATCAAGAGCAGAAATTCCTGAGCTACTTAAGTTG
2201 GACCTT
                                         2232 AGTCTT 2237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAAG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCTGCACTGTTGAGTTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAAGTCCTTTGTTAAATATTCCAATGGCTCGTATGTTACATCATGAGTACAATTCGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGC 1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAATCTGCTGATCTGGAGATGGCAAAGGCGGATTGTACTAGATGCAAAAATAGACTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATATGCCACGTATATATTGAC 1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGATGTAATTGATCTAGTGATTCCAAGAGGCAGCAACAAACTTGTCACTCAGATCAAG
                                                                                                                            ATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTGACAAGGATGTCGTGTACACCCCATAAG 2231
                                                                                                                                                                     ACAAGCAGGATTCATGCTCGGGGTCCAGTAGGAGTTGATGGATTGTTAACAACCAGATGG
                                                                                                                                                                                                                                                           GCTAGTACAAGATTCAGTGATGGGGCACGATTTGGACTAGGTGCAGAGGTTGGAATAAGT
                                                                                                                                                                                                                                                                                                  GCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGC
                                                                                                                                                                                                                                                                                                                                              GATCATGAAGTAGCCAATGTGTTTCTACGCCAAGTAGACAGTGCTGCTGTTTTCCACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAAGGCATGCCACTCTTTATTTCTTGATAATTGCACATACTGATTCCGTTGTTGCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTCAATAGTATTATTGACCTACGGACAGAAGGTGTTACATTGTATGGAGGACCCCAAG 1780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATT 1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGGCTGCAATGCCATGGAAACTCTTCTTGTTCACAAGGACTTGGTAGAGAAAGGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCA 1718
                                                                                  ATTCTCAAAGGAAGTGGACAAATAGTGGATGGTGACAAAGCAATTGACTACACTCACAGA 2200
                                                                                                                                                                                                               ACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAACTACACGATGG
2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----TGCTCATACAGATTGTATCGTCACTACA 1991
                                                                                                                                                                                                                                                                                                                                                  2020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1840
                                                                                                                                                                                                                                                               2080
                                                                                                                                                                                                                                                                                                                                                                                                                                       1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1480
                                                                                                                                                                                                                                                                                                         2111
                                                                                                                                                                                                                   2171
```

```
US-10-424-599-44248/c
US-10-424-599-44248/c
Sequence 44248, Application US/10424599
Publication No. US20040031072A1
GENERAL INFORMATION:
APPLICANT: LA ROSA THOMAS J
APPLICANT: Cao Vongwei
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE, REFERENCE: 38-21(5323)B
CURRENT APPLICATION NUMBER: US/10/424,599
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 44248
LENGTH: 2708
```

음 성 음 성

음 성 음 성 음 성 음

S B S

	AGATGCA 1674	1733 GAAAATÁTCATTAÁÁGTTCTCCÁAGGACAÁCGGÁTTGGAÁCCCTCTTCCATAAAGÁTGCA	מם ,
ACTCTTTATTTCTTGATAAT		891 CGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACAAGAATGCG	Qy
TGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTA	1734	1793 ATTTTCATCCTGCAAATTGGTTTTTCCTTGGTTCTGCCACATTTTAGTGGTTATGCAGCT	ממ
on 1	AGTGGGTTTGAAAAT 890	876AGTGGGT	δ
TANATAL I CHALGGE I CGIAIGI I ACAI CAIGGEALA CAIGGEALA COLLOCIO COLLOCALES CAIGGEALA COLLOCALES CAIGGEALA COLLOCALES CAIGGEALA	1794	1853 AGGAATTTTAATTCCAAGAACACTATGAAATCCATTATTTAT	당
TELEVACIONAL DE L'ALTRE L'ALTR	875 QY	876	δ
	1854	1913 ACTGCTAAAGTAAAGGCTTCTATTCATGCAGCTGAAGCTGGCATTCCTGTTATCATTA	B 4
1791 TTAGTAGCACTAAAAACAGAAGGAGTTAATATTTTATGGTGGACCTATTGCGCACAAAGCT 1850	87 F		? 5
911 GCCATGGAAACTCTTCTTGTTCACAAGGACTTGGTAGAGAAAGGTTGGCTCAATAGTATT 852	AGGCATG 815	756 GAAAGCATCAGCAAGAAATCACTTTTGGAGACAAATCTCGTGTAGGTAG	\$ \$
1731 GCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATA 1790		w	מם
CTGGAGATGGCAAGGCGGATTGTACTAGATGCAAAAATAGACTATCCAGCAGGCTGCAAT	~1	CCAC	γQ
	2034	2093 TCAGCTTTATTGGCATTGGAATTAAAAGCTGATCTTCTTATTTTGTTGAGTGA	מם
ATTCCTGTTCTTGGGCATGCTGATGGTATAGGCCACGTATATATA	695	36 GC	γQ
	A 2094	5/6 AGCACLAGAAAGGCICCAIAIGAGAITCAILIGEAN ALAILUGGAIA CAIGAGAIAGCICCAIAIGAGAGAITCTTCTGGCATATTTTGGGATAATGACAGTTTT	ρ ξ
1551 GATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTAAG 1610	CAGTT 2	13 AC) Db
1151 ATTGGACTTGTGACATCAAGAGCAGAAATTCCTGAGCTACTTAAGTTGGATGAAGTAATT 1092	CCATC 575	>	Q
	CAGCGAA 2214	2273 CAGCTTCTTGTGACGGACAATGATTTTAGAGACAAAGATTTCAGAATGCAGCT	gg
ANTGCAATTTTGCACAAAGTAATTACTGAAGCCATACCAGATATTGGTTGG	CACTGAA 515	456 CAACTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAA	8
1271 TIGGCAAICCGAAGTGGGAAIGGGCTTCTCTIGAAAGGAGGCAAGGAGGCIAAGGAAAACTI 1490	T 2274	33 C	Дb
TTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCAGCTATCAGATCA	T 455	96	8
TTAGGAGTTCTTTTAATTGTTTTTGAGTCTCGCCCTGATGCACTAGTACAGATAGCTTCT	2334	TITGCTGACCTTCAGAAGCCGCAAGTTGAACTTGATGGCAAGGCTTGTG	B &
1311 TTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTCGTTCAGATTGCATCT 1370	TGGT 3	LOLONOOLOLLILLIANDA KARONAANAA TARAKAANAA TARAKAANAA TARATAANAA TARATAANAA TARAKAANAA 1955. RATARATTARATTARATTARAKAANAA TARAKATAANAANAANAANAANAA TARATTAANAANAA 1968.	2 5
1391 CGAGTGTTAAAACGAACTGAGCTTGCAGAGGGGCTGATTTTGGAGAAAAACATCATCTTCT 1332	TAGCAGC 335	6 TCAGGTG	당 <i>성</i>
1251 CAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTGCCCA 1310	A 24	2513 GCACTCTGTGAGCAGATTAAGGAGCTGAATTCTCTTGGTTATGAGATTATTTT	Db
GCTTGCAAGCCTTGCTAACAACATTCGAATTATTGCAAACATGGAAGATCCAATTGGT	275	=======================================	88
ARGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCCTATAAAC	2514	2573 AAGGTTGGGAACTGCTGTGGTCACTCGCCAAGATGGAAGGTTAGCTGTTGGAAAAATTAGGG	qq
1131 GUGGLUGARGU GUGGARGU GUTA GUTA GUTA GUTA GUTA GUTA GUTA GU	GGTTGGA 215	156 AAGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGA	Ş
	2574	 GCCATGGAGAACACAGAT	שלם
GCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGGAATGAAGCTGATGTAGCT	155	96 GCCATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGC	Q
TGTTCCAGACGGCTTCAGGCCTATCTTCAGAAGAGAGAACAAATTTTGCTAAAAATA	Gaps 3;	y Match 37.9%; Score 966.8; DB 12; Length 2708 Local Similarity 66.4%; Pred. No. 5.7e-260; hes 1517: Conservative 0: Mismatches 617; Indels 150;	Query Ma Best Loc Matches
011 TGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAGATATTGCTAGATGTT	Qy :	ļ	占
951 AATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGAGAT 1010	Dh Qy	TYPE: DNA ORGANISM: Glycine max FEATURE: OTHER THROUGHTION. Clore ID. DAT MET3847 1399546 1	ORG

```
S
                                                               밁
                                                                                                           δ
                                                                                                                                                                   밁
                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; FEATURE:
; OTHER INFORMATION: Clone ID: 700803361_FLI
US-10-425-114-8907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-425-114-8907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313)B
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 8907
LENGTH: 1601
TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 8907, Application US/10425114 Publication No. US20040034888A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 34.6%;
Best Local Similarity 84.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 986; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, Davi
APPLICANT: Screen, Steve
             1391 TGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACGATATTGCATAAGGT 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                    1151 TGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAA 1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1091 TGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATA 1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2184 CGTGGGCAAGTGGTGAATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTG 2243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2004 GCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGA 2063
                                                                                                                                                                                                                                                                                                                             1211 ATCTATTCGTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTAAAAAAGACAGA
                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    371 TGAT 368
                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCAGTGATGGGGCACGATTTGGACTAGGTGCAGAGGTTGGAATAAGTACAAGCAGGATT 492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCAATGTGTTTCTACGCCAAGTAGACAGTGCTGCTGTTTTCCACAATGCTAGTACAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGTGGACAAATAGTGGATGGTGACAAAGCAGTTAACTACACTCACAGAGACCTTTCTATA 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CATGCTCGGGGTCCAGTAGGAGTTGATGGATTGTTAACAACCAGATGGATTCTCAAAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATC 2123
                                                                                                   TTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAA: 1390
                                                                                                                                                                     GATTGCTGAAAATTTAATTCTCGAGAAAACATCATGTCCTTTTGGGTGTCCTATTGGTTAT
                                                                                                                                                                                                    GGTTGCTGATGATTAGTTCTTGAGAAAACATCTTGCCCATTAGGTGTTCTCTTAATTGT
                                                                                                                                                                                                                                                                         ATCCATTCGCACTCTTGCACGTATGGAAGACCCAATCAACCAAATACTCAAAAGAACAGA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAGAATCTAATTAGGACCGAGAATGAAGCCGATGTAGCTGCAGCGCAAGATGCTGGATA
                                                                                                                                                                                                                                                                                                                                                                                  TGÁGAAATTTTTGGTTGATÁGATTGÁCCCTÁAAGCCAGGAAAGATATCAGCCCTCGCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 881; DB 12; Length 1601; Pred. No. 4.9e-236; O; Mismatches 175; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          552
                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                                                                                                                  120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
```

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                     S
                                                                                                                                                                                           밁
                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                   뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                        Ś
                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                    1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1751 TCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCACTAAAAACAGA 1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1571 AAGTAATAAGCTTGTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGC 1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1451 TATAACTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361 TATAACTGGTGCCATTCCTAGCAACGTGGGTGAAAAACTTATTGGCCTTGTTACAAGTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTGATGGATGCCAAAATTGATTACCCAGCAGCCTGCAATGCTATGGAGACATTGCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCACTCCAAGAGG 1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCAGCGATTGACCATATACATTGTTATGGAAGTGCACATACAGATTGCATTGTCACTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGCAATAAGCTGGTTTCACAAATCAAGACATCAACTAAGATCCCTGTTCTTGGTCATGC
                                        GAGTCTTCCTTTGCAATGAGG 2251
                                                                                              GATCATGCGAGGGAGCGGGCAAGTGGTGAACGGTGACAATGATATCGCATACACCCATAA 1140
                                                                                                                                  GATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTGACAAGGATGTCGTGTACACCCATAA 2230
                                                                                                                                                                                           CACAGGGGCTATACATGCTCGTGGGCCCGTGGGTGTTGAAGGTCTCTTAACAACGCGCTG
                                                                                                                                                                                                                       CACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAACTACACGATG 2170
                                                                                                                                                                                                                                                                                         TGCAAGCACACGATTCTCTGACGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAG
                                                                                                                                                                                                                                                                                                                                  TGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAG 2110
                                                                                                                                                                                                                                                                                                                                                                                                                                 AGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAA 2050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGATTGTATCGTCACTAC 1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTCATTCCATCATGAATATAGTTCTATGGCCTGCACAATTGAGTTTGTTGATGATGTACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCATTTCATCATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTGATGATGTTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTCTGGGATTTCCAAAAGCTGT 1870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGTAATGGATGCAAAAACTGATTACCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGATGGTATCTGTCATGTATACATCGACAAATCAGCTAACATGAATATGGCAAAACAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGATGGTATATGCCACGTATATTTGACAAATCAGCTGACATGGATATGGCAAAACTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGACGAAATTGCTGATTTACTAAAGCTTCATGATGTAATTGATCTTGTCATTCCAAGAGG
GAACCTTCCATTGCCATGAGG 1161
                                                                                                                                                                                                                                                                                                                                                                                        AGATGATAAAGTAGCAGAAACTTTTCTGCGTCAAGTTGATAGTGCTGCTGTGTTTCATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGAGTTGCTATTTTTGGGGGGCCTGTTGCACATGAAGTATTGTGCATTCCAGAAGCAAA 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1690
                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                              1020
```

Search completed: March 10, 2004, 11:58:20 Job time: 844.192 secs

301

TGGTĊTTCTTGAAAGGTGGAAAAGAAGCCATGAGATCAAACAAAGTATTGCATAAGGT

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Title:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Searched:
                                                                                                                                                                                                                                                                                                                                  a a
                                                                                              a
                                                                                                                                                    ດ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                       1092.8
190.6
190.6
183
175.2
160.2
131.2
125.8
125.8
123.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score
                                                                                     74.6
72.8
72.8
72.4
72.4
71.2
71.2
53.6
57.8
57.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             March 10, 2004, 10:29:50 ; Search time 178.536 Seconds (without alignments) 7923.149 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-026-767-1
2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          682709 seqs, 277475446 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Issued Patents NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gcggctgcggcaaggcg.....tgtgattgcacatatactaa 2549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0 0 0 0 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
/cgn2_6/ptodata/2/ina/5B_COMB.seq:*
/cgn2_6/ptodata/2/ina/A_COMB.seq:*
/cgn2_6/ptodata/2/ina/6B_COMB.seq:*
/cgn2_6/ptodata/2/ina/backfiles1.seq:*
                                                        2417
291
291
1281
261
1281
1281
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
1830121
18301
183012
183012
183012
183012
183012
183012
183012
183012
183012
1
7 1 US-07-953-695A-1
7 1 US-08-267-259-1
1 4 US-09-313-294A-491
6 4 US-09-313-294A-1035
6 4 US-09-313-294A-3665
6 4 US-09-313-294A-3665
6 4 US-09-313-294A-3665
8 6 4 US-09-313-294A-3665
8 6 4 US-09-313-294A-6792
1 1 4 US-09-257-884-6792
1 2 1 4 US-09-254-369A-2
2 1 4 US-09-107-52A-2515
2 2 US-08-961-527-22
1 4 US-09-107-52A-2515
2 3 US-09-107-52A-178
2 4 US-09-107-52A-178
2 9 4 US-09-107-52A-178
3 US-09-107-52A-178
4 US-09-107-52A-178
4 US-09-107-52A-178
5 US-09-107-52A-178
6 US-09-252-991A-5605
8 1 US-09-252-991A-5605
8 1 US-09-252-991A-5605
8 1 US-09-252-991A-5605
9 US-09-543-681A-889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SUMMARIES
Sequence 1, Appli
Sequence 4491, Appli
Sequence 1035, Ap
Sequence 1102, Ap
Sequence 11616, Ap
Sequence 1616, Ap
Sequence 1, Appli
Sequence 1, Appli
Sequence 2, Appli
Sequence 22, Appli
Sequence 21, Appli
Sequence 21, Appli
Sequence 2515, Ap
Sequence 21, Appli
Sequence 1786, Ap
Sequence 1786, Ap
Sequence 1786, Ap
Sequence 533, Appli
Sequence 533, Appli
Sequence 5600, Ap
Sequence 5600, Ap
Sequence 5605, Ap
Sequence 5605, Ap
Sequence 5605, Ap
Sequence 14, Appl
Sequence 1899, App
Sequence 1899, App
Sequence 1899, App
Sequence 11, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Description
```

RESULT 1 Sequence 1, Application US/07953695A Retert No. 534922 GENERAL INCORPANTION: Nullectide Sequence Encoding For Bifunctional Enzymes For Prol NUMBER OF SEQUENCES: A PRICE NO. 544922 GENERAL INCORPANTON: Nullectide Sequence Encoding For Bifunctional Enzymes For Prol NUMBER OF SEQUENCES: A PROPERTY OF SEQUENCES: A PROPERTY OF SEQUENCES: A CORRESSEE: Kremblas, Foster, and Millard STREET: 612 51 ste Ridge Blvd. CITY: Columbus STATE: Ohio STATE: Ohio COMPUTER: READABLE FORM: YELD: A 1006 STATE: A 1006 COMPUTER: MacLincoh COMPUTER: MacLincoh COMPUTER: MacLincoh OPERATION STATE: Microsoft Word CURRENT APPLICATION DATA: A PRICATION DATA: A PRICATION NUMBER: US/07/953,695A FILING DATE: 1920929 FILING DATE: 1920929 FILING DATE: TOPESAMTION: A 135 FRIOR APPLICATION NUMBER: 24,560 RESENSENCE POSCENT UNMBER: 24,756 RESENSENCE POSCENT UNMBER: 14,956 FREEDENMINICATION HIMPSRATION: TRLEPHONS: (6:4) 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 0419 575-2169 INFOR	28 46.4 1.8 1830121 4 US-09-643-990A-1 Sequence 1, Appli 29 43.8 1.7 1656 4 US-09-446-301A-1 Sequence 1, Appli 30 43.8 1.7 1656 4 US-09-496-301A-1 Sequence 1, Appli 31 43.8 1.7 2411 4 US-09-09-932-47 Sequence 15, Appli 32 43.8 1.7 2411 4 US-09-09-932-47 Sequence 25, Appl 32 42.8 1.7 125 3 US-09-09-874A-25 Sequence 25, Appl 34 42.8 1.7 1125 3 US-09-104-382-25 Sequence 25, Appl 34 42.8 1.7 1125 4 US-09-874-25 Sequence 25, Appl 36 42.8 1.7 1125 4 US-09-856-171E-206 Sequence 25, Appl 37 42.2 1.7 819 4 US-09-107-532A-944 Sequence 26, Appl 38 41.6 1.6 832 4 US-09-107-532A-944 Sequence 26, Appl 38 41.6 1.5 1584 4 US-09-621-976-2813 Sequence 2813, Appl 40 38.2 1.5 1149 4 US-09-328-352-375 Sequence 2813, Appl 40 38.2 1.5 1149 4 US-09-328-352-355 Sequence 27, Appl 41 38 1.5 357 4 US-09-328-352-355 Sequence 27, Appl 41 37.2 1.5 580073 4 US-08-915-27-332-33 Sequence 27, Appl 42 37.8 1.5 580073 4 US-08-915-27-33 Sequence 27, Appl 43 37.8 1.5 580073 4 US-08-915-27-3 Sequence 27, Appl 44 37.2 1.5 480 4 US-09-134-000C-1373 Sequence 1, Appli 59 40 40 40 40 40 40 40 40 40 40 40 40 40

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                    Ś
                                                                                                  В
                                                                                                                                           Ś
                                                                                                                                                                                      밁
                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-07-953-695A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 42.9%;
Best Local Similarity 70.9%;
Matches 1519; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LIBRARY: cDNA expression library
CLONE: cDNA clone
PUBLICATION INFORMATION:
AUTHORS: Chien-An A. Hu, Ashton J. Delauney and Desh Pal S. Verma
TITLE: A bifunctional enzyme (deltal-pyrroline-5-carboxylate synthetase)
JOURNAL: Proceeding of the National Academy of Science USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ISSUE: October
PAGES: 9354-9358
DATE: OCT-1992
RELEVANT RESIDUES IN SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     229
                    829
                                                    888 AATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTTGGTACTCTCTTTCACAAGAAT 947
                                                                                                                                             828
                                                                                                                                                                                        709
                                                                                                                                                                                                                                                                          649
                                                                                                                                                                                                                                                                                                                                                             589
                                                                                                                                                                                                                                                                                                                                                                                                                                               529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     108 GTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAGGTGGGCACT
                                                                                                      769
                                                                                                                                                                                                                                 768
                                                                                                                                                                                                                                                                                                                    708
                                                                                                                                                                                                                                                                                                                                                                                                      648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              49
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTATTGGACGCCAAAGGCTACGTTTCCGTAAATTAATCAACAGCAGCTTCGCCGACCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGGATCCTTCTCGGGGGTTCATGAAGGACGTGAAGCGTGTGATCATCAAAGTTGGCACC 108
                    CCTGAGAATATCATTAATGTTCTCCAAGGACAACGTATAGGAACTCTCTTCCATAAAGAT 888
                                                                                                                                    AAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAA 887
                                                                                                                                                                                      AATGAAATTACTTTTGGCGACAAGTCTAGAGTGGGAAGAGGCGGAATGACTGCCAAAGTA
                                                                                                                                                                                                               CAAGAAATCACTTTTGGAGACAAATCTCGTGTAGGTAGAGGAGGCATGACAGCAAAAGTG
                                                                                                                                                                                                                                                                        GCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTCCCTATGAGGATTCTTCTGGTATATTTTGGGATAATGATAGTTTATCTGCTTTATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTG 647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGTTGGCGCTGAAGGTTATTCCGGTGTTCAATGAGAACGATGCCGTTAGTACCAGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACGGATAACGATTTTCGAGATAAGGATTTCAGGAAGCÁGCTTACTGAGACTGTGAAGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCGACAGTGATTTTGAGAACCCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGGCTCTCTACGATACGCTGTTCACTCAGCTCGATGTGACATCGGCTCAGCTTCTTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGAAACCCCAACTCGAACTCGACGGCAAGGCCTGCGCCGCCGTTGGACAGAACAGTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAMAAGCCACAGATGGAGTTAGATGGAAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAGTGGGGGGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGATTAAGCAACTCTCTCGGATACGACATTATACTCGTCTCCTCTGGCCCCGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGGTGGTCACTCGCGAAGAAGGAAGGTTAGCGGTTGGAAGATTGGGAGCTCTGTGCGAG
                                                                                                      AAAGCTGCGGTTCATGCAGCTGAAGCTGGCATTCCTGTTGTTATTACCAGTGGTTTTTGCA
                                                                                                                                                                                                                                                                                                                 СЕТССАССА В СТВА В СЕТСАТСА ТЕЛАЛА В ТЕЛЕТ В ТЕЛЕТ В В В В В СЕТСА СЕТСА СЕТСА СЕТСА СЕТСА СЕТСА СЕТСА СЕТСА С
                                                                                                                                                                                                                                                                                                                                                               GCCTTGGAGTTAAAAGCCGATCTCCTTGTTTTGTTGAGTGATGTAGAAGGTCTTTACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1092.8; DB 1; Length Pred. No. 5.5e-312; 0; Mismatches 617; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FROM position 37 to position 2049 GenBank
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ٠.
ص
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                        . 828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           167
                                                                                                                                                                                                                                    827
                                                                                                                                                                                                                                                                                                                                                                                                          707
                                                                                                                                                                                                                                                                                                                                                                                                                                                   588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       227
                                                                                                                                                                                                                                                                                                                                                                 648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         228
                                                                                                                                                                                                                                                                               708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           catalyz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                             S
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
S
                                         밁
                                                                                                                           ᅜ
                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1188
                                                                                                                                                                                                                 1788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1068 TACTGCTGCACAAGAAGCAGGATATGAAAAATCCTTGGTGGCTAGGCTAGCTTTAAAAACC 1127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1067 TGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGT 1126
    2027 TGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTG- 2085
                                           1908 ACATACTGATTCGATCGTTGCTGAAGATAACGAAGTAGCTAATGTGTTTCTACGCCAAGT
                                                                                                                               1848 CGCCGAAATTGTGGATGACGTGTATGCAGCTATTGATCATATAAATCTGTATGGAAGTGC
                                                                                                                                                                      1907 TGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGC 1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               948
                                                                             TCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGAT 2026
                                                                                                                                                                                                               TCTGTTAAATATTCCACAAGCACATTCATTTCATCATGAGTACAGTTCGCTGGCTTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                               CAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGA 1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAACGTGGAGATGGCAAAGCGGATTGTATTAGATGCAAAAGTTGATTATCCGGCAGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATTGATCTGGTAATTCCAAGAGGCAGTAACAAACTTGTTTCTCAGATCAAGAGTTCAAC 1547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAAC 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCAAATGCAATTTTGCACAAAGTAATTATCGAGGCCATACCAGATAATGTTGGTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGGAAGATTGCAAGTCTTGCAAACAACATGCGAATCATTGCCAATATGGAAGATCCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACC 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAATGTTCGAGAAGGCTCCAGGCGTTATCTTCAGAGGAAAGGAAACAAAATTTTACTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGG-AACGAAAAAAGATATTGCTAGA 1066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCACATGAGTGGGCTCAAGTAAAAGAGGTTGATGCACGTGAGATGGCTGTTGCAGC-AGG 947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGA 1007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAAAATTCCTGTTTTAGGTCATGCTGATGGAATTTGCCCATGTCTATGTTGATAAGTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTTATAGGACTTGTGACCTCAAGGGAAGAGATCCCTGAGCTACTTAAGTTGGATGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAA 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCATTGGCAATCCGAAGTGGGAATGGGCTTCTCTTGAAAGGTGGCAAAGAAGCTAAGCG 1367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAAGGTGGAAAAAGAAGCTATCAG 1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCTTTGGGAGTGCTCCTTATTGTTTTTGAGTCACGTCCTGATGCTCTTGTACAGATAGC 1307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGC 1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGGTCGAGTATTAAAACGTACCGAGCTTTCAGATGGGCTAATTTTAGAAAAGACATCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTG 1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATAGCTGATGCCCTGGAAGCAAATGAAAAAAATAATCAGGATTGAAAATGAAGCTGATGT
                                                                                                                                                                                                                                                           AGCTCTGGGATTTCCAAAAAGCTGTTTCATTCATCATGAGTATAGTTCTATGGCCTGCAC 1906
                                                                                                                                                                                                                                                                                                    GATCATTCTTGACCTTCGAACTGAAGGCGTTATATATATGGTGGCCCTGTGGCAAGTTC 1787
                                                                                                                                                                                                                                                                                                                                          CATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAA 1846
                                                                                                                                                                                                                                                                                                                                                                                        CAATGCCATGGAAACACTTCTTATCCACAAGGATTTGATAGAGAAAGGTTGGCTTAAGGA 1727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAAACTGATTACCCAGCAGCCTG 1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TAAGATTCCTGTTCTTGGGCATGCTGATGGTATATATGCCACGTATATATTGACAAATCAGC 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGT 1546
```

1427

1247

1187

1246

1067

1007

1487

1667

1607

1967

1907

```
문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 2
US-08-267-259-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뭉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1, Application US/08267259
Patent No. 5639950
GENERAL INFORMATION:
APPLICANT: VERMA, D. et al.
                                                                                                                                                                                                                                                             Patent No. 5639950
FRAGMENT TYPE: N-terminus: N-MESAVDES--
FRAGMENT TYPE: C-terminus:--RRRGWN-C
FRAGMENT TYPE: Internal Fragment:--VDAREMAV--
ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (614) 575-2149 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: 7.0
OPERATING SYSTEM: 7.0
SOFTWARE: Microsoft Word
CURRENT APPLICATION DATA:
CONTROL NUMBER: US/08/267,259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: VERMA, I
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
PUBLICATION INFORMATION:
AUTHORS: Chien-An A. Hu, Ashton J. Delauney and Desh Pal S. Verma
TITLE: A bifunctional enzyme (deltal-pyrroline-5-carboxylate synthetase) catalyz
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 29-SEP-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 2417 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION:
                                                                                                                                                         IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-
STREET: /-

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: Macinto
OPERATING SYSTEM:
                                                                                                                                                                            STRAIN: Mothbean
DEVELOPMENTAL STAGE: Root nodules
                                                                                                                                                                                                                                                                                                                                                                                                           DESCRIPTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
                                                                                                                              LIBRARY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
                                                                                                                                                                                                                                        ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2145 ATAGAGGCGTTGTCTACACCCACAAAGACCTTGCAATTTAAT 2186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2086 GTTGAGGATTGTTAACAACAAGATGGATACTAAAAGGAAG-GGACAAGTGGTAGATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2028 GACTAGGCGCAGAGGTTGGAATTAGTÁCAAGCAGGATTCÁTGCTCGAGGTCAGTAGG--A 2085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2086 GATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTG 2145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2146 TTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTG 2205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        43068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5639950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Foster,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAAT 2247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGACAGTGCTGCTGTTTTTCACAATGCAAGCACCAGATTCAGTGATGGGGCACGATTTGA 2027
                                                                                                      cDNA clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E: Kremblas, Foster, and Millard
7632 Slate Ridge Blvd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                           cDNA expression library
                                                                                                                                                                                                                                        Vigna aconitifolia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (614) 575-2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence encodes Pyrroline-5-carboxylate synthetase, a bifunctiona
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Diskette, 3.5 inch, 720 Kb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                               CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   double stranded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Frank H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nucleotide Sequence Encoding For Bifunctional Enzymes For Pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07/953,695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24,560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>..</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         먉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                              S
                                                                                                                                                                                        밁
                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                    멅
                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                먉
                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 1519; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VOLUME:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ISSUE: October PAGES: 9354-9358 DATE: OCT-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL:
                     1008 GATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGG-AACGAAAAAAAGATATTGCTAGA 1066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            349
                                                                                                                                                                                                                                                                                                    769
                                                                                                                                                                                                                                                                                                                                                                                                                 709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                42.9%;
```

```
; RELEVANT RESIDUES IN SEQ ID NO: 1: US-08-267-259-1
                                                                                                                                                                  829 CCTGAGAATATCATTAATGTTCTCCAAGGACAACGTATAGGAACTCTCTTCCATAAAGAT 888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                768 CAAGAAATCACTTTTGGAGACAAATCTCGTGTAGGTAGGAGGAGGCATGACAGCAAAAGTG 827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              528 TTATTAGATOTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGAAAG 587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        409 ACGGATAACGATTTTCGAGATAAGGATTTCAGGAAGCAGCTTACTGAGACTGTGAAGTCG 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    348 CAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGACTG 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           288 GGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTTGCTGATCTG 347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 169 CAGATTAAGCAACTCAACTCTCTCGGATACGACATTATACTCGTCTCCTCTGGCCCCGTC 228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         109 GCGGTGGTCACTCGCGAAGAAGGAAGGTTAGCGGTTGGAAGATTGGGAGCTCTGTGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      168 GCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 108 GTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAGGTGGGCACT 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           49 GTGGATCCTTCTCGGGGGTTCATGAAGGACGTGAAGCGTGTGATCATCAAAGTTGGCACC 108
                                                                                 GCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCAAGA 1007
                                                                                                                                                                                                                                               AATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACAAGAAT 947
                                                                                                                                                                                                                                                                                                                                                                                                                  AAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTTGAA 887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATGAAATTACTTTTGGCGACAAGTCTAGAGTGGGAAGAGGCGGAATGACTGCCAAAGTA 768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCCCTCCAAGTGACCCTCATTCAAAGCTTATTTATACATATAACAAAGAAAAAACATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCTTGGAGTTAAAAGCCGATCTCCTTGTTTTGTTGAGTGATGTAGAAGGTCTTTACAGT 648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTATAGT 707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTGTTG 647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGTTGGCGCTGAAGGTTATTCCGGTGTTCAATGAGAACGATGCCGTTAGTACCAGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGGCTCTCTACGATACGCTGTTCACTCAGCTCGATGTGACATCGGCTCAGCTTCTTGTG 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AIGGCICTITACGATAIGTIGTITAACCAACTGGATGTCTCGTCATCTCAACTTCTTGTC 467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CÁGAAACCCCAACTCGAACTCGACGGCAAGGCCTGCGCCGCCGTTGGACAGAACAGTCTC 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTATTGGACGCCAAAGGCTACGTTTCCGGTAAATTAATCAACAGCAGCTTCGCCGACCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGGITAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCTGTT 287
GCACATGAGTGGGCTCAAGTAAAAGAGGTTGATGCACGTGAGATGGCTGTTGCAGC-AGG 947
                                                                                                                                                                                                                                                                                                                                     AAAGCTGCGGTTCATGCAGCTGAAGCTGGCATTCCTGTTGTTATTACCAGTGGTTTTGCA 828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAAAAGCATCAG 767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTCCCTATGAGGATTCTTCTGGTATATTTTGGGATAATGATAGTTTATCTGCTTTATTA 588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAGTCA 527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Proceeding of the National Academy of Science USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches 617; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1092.8; DB 1
Pred. No. 5.5e-312;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FROM position 37 to position 2049 GenBank N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 2417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        708
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ت
د
```

유

В

```
1667
                                                                                                                                                                                                                                                                                                                                   1967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1488 AATTGATCTGGTAATTCCAAGAGGCAGTAACAAACTTGTTTCTCAGATCAAGAGTTCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1487 ACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGT 1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1128 TGGGAAGATTGCAAGTCTTGCAAACAACATGCGAATCATTGCCAATATGGAAGATCCAAT 1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1127 АGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAACC 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1008 ANTAGOTGATGCCCTGGAAGCAAATGAAAAATAATCAGGATTGAAAATGAAGCTGATGT 1067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1067 TGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGATGT 1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1547 CATTGATCTTGTCACTCCAAGGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAAC 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1367 ATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATCAG 1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1248 TCCTTTGGGAGTGCTCCTTATTGTTTTTGAGTCACGTCCTGATGCTCTTGTACAGATAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1307 CCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATTGC 1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1247 AAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCTTG 1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1187 AGGAAAGATAGCAAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCTAT 1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1068 TACTGCTGCACAAGAAGCAGGATATGAAAAATCCTTGGTGGCTAGGCTAGCTTTAAAACC
                                                                                                                                                                                                                                                   1908 ACATACTGATTCGATCGTTGCTGAAGATAACGAAGTAGCTAATGTGTTTCTACGCCAAGT
                                                                                    1968 AGACAGTGCTGCTTTTTCACAATGCAAGCACCAGATTCAGTGATGGGGCACGATTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                       1848
2086 GATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTG 2145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         948 GAATGTTCGAGAAGGCTCCAGGCGTTATCTTCAGAGGAAAGGAAACAAAATTTTACTTAA 1007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCATTGGCAATCCGAAGTGGGAATGGGCTTCTCTTGAAAGGTGGCAAAGAAGCTAAGCG 1367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGC 1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTGTTAAATATTCCACAAGCACATTCATTTCATCATGAGTACAGTTCGCTGGCTTGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GÁTCATTCTTGACCTTCGAACTGAAGGCGTTATATTATÁTGGTGGCCCTGTGGCAAGTTC 1787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAA 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGACGA 1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAAAÁTTCCTGTTTTAGGTCATGCTGATGGAÁTTTGCCATGTCTATGTTGATAAGTCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAATCAGC 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTTATAGGACTTGTGACCTCAÁGGGAAGAGATCCCTGÁGCTACTTAAGTTGGATGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCAAATGCAATTTTGCACAAAGTAATTATCGAGGCCATACCAGATAATGTTGGTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAAAA 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGTCGAGTATTAAAACGTACCGAGCTTTCAGATGGGCTAATTTTAGAAAAGACATCATC
                                                                                                                                                               TGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTG- 2085
                                                                                                                                                                                                                                                                                                                                   TCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGT 2026
                                                                                                                                                                                                                                                                                                                                                                                                                   CGCCGAAATTGTGGATGACGTGTATGCAGCTATTGATCATATAAATCTGTATGGAAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCTCTGGGATTTCCAAAAGCTGTTTCATTCATCATGAGTATAGTTCTATGGCCTGCAC 1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAATGCCATGGAAACACTTCTTATCCACAAGGATTTGATAGAGAAAGGTTGGCTTAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TAACGTGGAGATGGCAAAGCGGATTGTATTAGATGCAAAAGTTGATTATCCGGCAGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCAGCAGCCTG 1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1247
                                                                                                                                                                                                                                                                                                                                                                                                                           1907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1307
                                                                                                                                                                                                                                                            1967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1127
```

S 밁 Ś 밁 ş 밁 Ş 밁 8 밁 Ś 밁 V_O 밁 S 片 á 밁 Ş 밁 Ş

문

유정

유정

Ş

5 5 5 5 5

RESULT 4 US-09-313-294A-1035

Sequence 1035, Application US/09313294A Patent No. 6476212 GENERAL INFORMATION:

APPLICANT: Lalgudi, Raghunath V.
APPLICANT: Ito, Laura Y.
APPLICANT: Ito, Laura Y.
APPLICANT: Sherman, Bradley K.
TITLE OF INVENTION: POLYNUCLEOTIDES AND POLYPEPTIDES DERIVED FROM CORN
FILE REFERENCE: PL-0017 US
CURRENT APPLICATION NUMBER: US/09/313,294A

片

```
გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                 밁
                                                                                                                         Ś
                                                                                                                                                                        밁
                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-313-294A-4491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-313-294A-4491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Lalgudi, Raghunath V.
APPLICANT: Ito, Laura Y.
APPLICANT: Ito, Laura Y.
APPLICANT: Sherman, Bradley K.
TITLE OF INVENTION: POLYNUCLEOTIDES AND POLYPEPTIDES DERIVED FROM CORN EAR FILE REFERENCE: PL-0017 US
CURRENT APPLICATION NUMBER: US/09/313,294A
CURRENT FILING DATE: 1999-05-14
NUMBER OF SEQ ID NOS: 7600
SOFTWARE: PERL PROGram
SQI ID NO 4491
LENGTH: 291
TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 4491, Application US/09313294A Patent No. 6476212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
NAME/KBY: misc feature
OTHER INFORMATION: Incyte ID No. 6476212 700348515H1
NAME/KBY: unsure
LOCATION: 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OTHER INFORMATION: a, t, c, g, or other
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Match 7.5%; Local Similarity 80.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2145 ATAGAGGCGTTGTCTACACCCACAAAGACCTTGCAATTTAAT 2186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2206 ACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAAT 2247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2146 TIGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGTG 2205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2028 GACTAGGCGCAGAGGTTGGAATTAGTACAAGCAGGATTCATGCTCGAGGTCAGTAGG--A 2085
242
                         944 GAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGG 993
                                                                                    182 GCATCTCAGAGCATTGTTAGAGTNCCTCCAAGGAGAGAGATTGGTACTCTCCTTCCATAA
                                                                                                                                                                                                                  825 GTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTT
                                                                                                                                                                                                                                                                                                        705 AGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAAAAGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                         234;
                                                                                                                                                                                                                                                              2 AGCGGTCCACCAAGCGAACCGGGATCAAAGATCATTCATACCTACATTAAAGATAAACAT
                                                                                                                           GAAAATCGGAGCATTCTTAAAGTT-CTTCATGGGGAAAAAATTTGGTACTCTCTTTCACAA
                                                                                                                                                                          ĠŦĠĄĄĠĠĊŦĠĊŦŦŦŦĠŦĠĠĊŦŦĊĠĄĄĊĄĠŦĠĠĊĄĊĄĊĊŦĠŦŦĠŦŦĄŦŦĄĊĄĄĠŦĠĠĄŦŦŦ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTGAGGATTGTTAACAACAAGATGGATACTAAAAGGAAG-GGACAAGTGGTAGATGGTG
GGATGCAAGTCTGTGGGAGCCATCCAAGGATGTTAGTGCTCGTGAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 190.6; DB 4; Pred. No. 2.9e-46; 0; Mismatches 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                             μ
-,
    291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2144
                                                                                                                                                                                 181
                                                                                                                                     943
                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                      764
```

```
В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT FILING DATE: 1999-05-14
NUMBER OF SEQ ID NOS: 7600
SOFTWARE: PERL Program
SEQ ID NO 1035
LENGTH: 276
TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-543-681A-1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-313-294A-1035
                                                                                         Ś
                                                                                                                                                                                     S
Ś
                                              Ď,
                                                                                                                                                                                                                                                                                                                                          US-09-543-681A-1122
                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: GARY BRETON
APPLICANT: GARY BRETON
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PROTEUS MIRABIL
TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.1002-001
CURRENT APPLICATION NUMBER: US/09/543,681A
CURRENT FILING DATE: 2000-04-05
PRIOR APPLICATION NUMBER: US 60/128,706
PRIOR APPLICATION NUMBER: US 60/128,706
PRIOR FILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 8344
SEQ ID NO 1122
LENGTH: 1281
TYPE: DIA
ORGANISM: Proteus mirabilis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1122, Application US/09543681A Patent No. 6605709
                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 590; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: unsure
LOCATION: 6, 28, 56, 118, 144, 182, 237, 245, 256
OTHER INFORMATION: a, t, c, g, or other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
NAME/KEY: misc_feature
OTHER INFORMATION: Incyte ID No. 6476212 700550271H1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
     1108 CTGAGAATGAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTG 1167
                                                                                            1048 GAAAAAAGATATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGT 1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      574 TCAGCACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                813 ATGACAGCAAAAGTGAAGGCTGCTGTCTTGGCTTC 847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         694 ATGGGTTGTATAGTGGTCCACCA-AGTGAACCATCATCAAAAATCATACACACTTATATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     634 TAGCAGGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGG
                                                                                                                                                                                        988 AGATGGCTGTTGCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAAC 1047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               221; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 TAGCTGGTCTTTTGGCTATTGAACTTAAAGCAGATCTCCTTGTTCTACTAAGTGATGNAG
                                              98 AAAATCAGGCACTGTTAGTCATCGCTGATTTATTAGAACAGCAAGAAGCCATTATTCTTG 157
                                                                                                                                            38 AAATGGGAAAAGCGGCGCGAGAAGCTTCTTGGCACTTAGCTCAGCTATCAACCGAACAAA 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCAGCNCTAGAAAGGCTCCATATGAGGNTTCATCTGGTATATTCTGGGATAATGANAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGGTCTATACAGCGGTCCACCANAGCGAACCGGGATCAAAGATCATTCATACCTACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGANAGCTAAAGTGNAGGCTGCTTTTGTGGCTTC 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7.2%; Score 183; DB 4; Length 276; 80.4%; Pred. No. 4.9e-44; ative 0; Mismatches 53; Indels
                                                                                                                                                                                                                                                          6.9%; Score 175.4; DB 4; Length 1281; 48.6%; Pred. No. 2.4e-41;
                                                                                                                                                                                                                                        0,
                                                                                                                                                                                                                                        ed. No. 2.4e-41;
Mismatches 596; Indels 27; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                            Ś
                                                                                                                        Ś
                                                                                                                                                                           В
                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                            묽
                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1228 CAAATATGGAAGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAG 1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1759 АГСТТАТБААБАБТССАББССТТБАС----- БАСАТАТТАБТАБСАСТАААААСАБААБ 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1639 TATGCCACGTATATATTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGG 1698
                              2161 CTACACGATGGAT 2173
                                                                                                                                                                                                                                                                                                                                                                                                                    1921 ATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGATTGTA 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1861 CAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTG 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1813 GAGTTAATATTTATGGTGGACCTATTGCGCACAAA------GCTCTGGGATTTC 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1699 ATGCAAAAACTGATTACCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGG 1758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1579 AGCTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTA 1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 158 CTGCTAATGAAAAAGATATGGTGGCGGCACGAGAGTCTAATATTAATGCTGCAATGCTTG
                                                                                                                                                                                                                                                                                                                                                                      998 ATGATTTAACGGCGGCAATTGCTCATATTCGCCAATATGGTACCGCGCACTCAGATGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      218 ATCGTTTATTACTCACATCAGAACGTTTAAAAGCGATCGCTGATGATGTTCGCCAAGTTT 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGACAGAAGCAGATTATTGTGATGAATGGCTATCACTGGATCTGAATGTTGAAGTCGTTA 997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCATGCCAGTCAACGCGCTATAACTGCATTGAAAAAGGGACGTGCGACGGTCGTCGATG 937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTATTGCGGAGAGTTTCTTGCCTCAATTAAGTGATGCGATGGCAGCACAAAAGGTTACTT 877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTGTCACACCTTTGTTGACGAAAGTGCTGATTTAGACCAAGCATTAAATGTTATTA 757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATA 1578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGGAAAAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTAT-----AACTG 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGTGACTATAGATGTAGCATCTTTATGCCTAAAAACAGGGAATGCGGCTATTCTCCGTG 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTTAGAACGCCGCCGAGTCCCTTTAGGGGTTGTTGGCGTTATTTACGAAGCTCGTCCAA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCTTGAGAAAACATCTTGCCCATTAGGTGTTCTCTTTAATTGTTTTTGAGTCCCGACCTG 1347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTAGATTGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTG 1227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGCTAAAGTTCAGCGTCCAAGCGCATGTAATTCGTTAGAAACGCTATTGGTACATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AMACATGTGCTATTCCTGCGGCTGCTATTCAMGCTMTCGATAMGCCMGMTCGCGAMTTMG 577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGA 1518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGCCTTGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAG 1407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTCATCTAGAAGATCCTGTAGGTCAAGTGATAGATGGTCGTTTATTAGACAGTGGCTTAC 337
                                                                                                                                                                                                          TATTICATAATGCAAGTACGAGATICTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGG 2100
                                                                                                                                                                                                                                                                                                                     TCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTG 2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOGOAAAAATGOTAAAAATGGATGAGTATATTGATATGOTTATTTOOTTGGAGGTGGTGCAG 637
                                                                            TAGCGGTGAGTACACAAAAGCTACATGCACGAGGCCCTATGGGATTAGATGCTCTAACCA 1237
                                                                                                                          TTGGCATAAGCACAGGCCTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAA
                                                                                                                                                                           TATATGTGAATGCTAGCACACGTTTTACAGATGGTGGACAGTTTGGCTTAGGTGCTGAAG
                                                                                                                                                                                                                                                                       TTTTAACGCAATCTATCAGTCATGCTGATCGCTTTGTACGCCAAGTTGATTCTGCTGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         217
                                                                                                                                                                                                                                                                               1117
                                                                                                                                                                                                                                                                                                                                                                           1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   817
                                                                                                                                  2160
                                                                                                                                                                                   1177
```

B

1238 CCTATAAATGGAT 1250

```
APPLICANT: 100, Laura Y.

APPLICANT: Sherman, Bradley K.

TITLE OF INVENTION: POLYPROTIDES AND POLYPROTIDES DERIVED FROM CORN EAR
FILE REFERENCE: PL-0017 US
CURRENT APPLICATION NUMBER: US/09/313,294A
CURRENT FILING DATE: 199-05-14
NUMBER OF SEQ ID NOS: 7600
SOPTWARE: PERL PROGram
SEQ ID NO 3665
LENGTH: 256
TYPE: 7---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Ito, Laura Y.

APPLICANT: Ito, Laura Y.

APPLICANT: Sherman, Bradley K.

FIITLE OF INVENTION: POLYNUCLEOTIDES AND POLYPEPTIDES DERIVED FROM CORN EAR

FILE REFERENCE: PL-0017 US

CURRENT APPLICATION NUMBER: US/09/313,294A

CURRENT FILING DATE: 1999-05-14

NUMBER OF SEQ ID NOS: 7600

SOUTWARE: PERL Program

SEQ ID NO 1616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-313-294A-1616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; OTHER INFORMATION: a, US-09-313-294A-1616
                                                                                                                                                                                                                                                                                                                           RESULT 7
US-09-313-294A-3665
                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1616, Applic
Patent No. 6476212
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 192;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME/KEY: unsure
LOCATION: 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: misc_feature
OTHER INFORMATION: Incyte ID No. 6476212 700551225H1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 261
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1974 GATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGT 2033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1914 TTTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACA 1973
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2154 CTCTTA 2159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2094 GCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGT 2153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2034 GCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGGT 2093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       182 GCTGAGGTTGGCATAAGTÁCÁGAGCGCATACATGCCCGCGGACCTGTTGGAGTTGATGGA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122 GCCGCTGTGTTTCATAATGCAAGCACAAGGTTTTGTGATGGGACGCGTTTTGGGGCTAGGT 181
                                                                                                                                                                                                                                                                                                                                                                                                          242 ANCTAA 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACTGCATCATCACAACTGATAGAAGTGCTGCAGAGGCCTTTCTGCAGCAAGTTGATAGT 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/09313294A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        78.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   , g,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 160.2; DB 4
Pred. No. 2.6e-37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        54; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 261;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <u>,</u>
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                      δ
                                                                                                              Ś
                                                                                                                                                                 밁
                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                           닭
                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                      片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ORGANISM: Acinetobacter baumannii US-09-328-352-3804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-328-352-3804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-313-294A-3665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: GATY L. BITCON et al.
APPLICANT: GATY L. BITCON ET AL.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER
TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 3804
LENGTH: 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 3804,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 451;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
NUMBER OF SEQ ID NOS: 8252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILE REFERENCE: GTC99-03PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY: misc_feature
OTHER INFORMATION: Incyte ID No. 6476212 700612075H1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity 74.0 es 176; Conservative
1642 GCCACGTATATATTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATG 1701
                                                                                                                                                                                                              1525 ---ATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGC 158:
                                                                                                                                                                                                                                                                                                                                                                                                    1411 GAAAAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTC 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1351 CCTTGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTG 1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1291 TTGAGAAAACATCTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATG 1350
                                                                                                                                                                                                                                                                                                         1471 GTAATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAG-----
                                                                                                                   1582 TIGICICICAAAICAAGGCGICAACIAAGAIICCIGIICTICGGCAIGCIGAIGGIAIAI 1641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          141
                                                                                                                                                                                                                                                                                                                                                      467 GCTCAGAAGCACTTGAGTCAAATAAAGCAATCGCAGAAGCGGTGAAGCATGGCTTAAAAG 526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          276 TCAGGTGCTGTTGGAGTGGGGGGACAGCGACTTAGGTACCGGAAGCTTGTCAATAG 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       216 GCTCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACC 275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    156 AAGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGA 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                      407 TCACACTTGAAGCTGCATCTTTAGCAATTAAATCGGGCAATGCCATTATTTTACGTGGTG 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          81
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96 GCCATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGGACGTGAAGCGCGTCATCATC 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     656295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTCTTTGTGAACAGGTGAAAGAGATAAATGCTCTAGGATACGAGGTGATCATTGTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGTGGGCACTGCAGTTGTCACGAGGCATGATGGGCGAGTATCCACAGGCAATTTTGGT 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTCATGGCCACCGCAGACCAGAGCCGTATTTTCATGAAGGACGTCAAACGCGTCATCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCAGGTGCTGTTGGTGGGGAAGCAGAGGTCAATTACAGGAAGCTTGTCAATAG 256
                                                                                                                                                                                                                                                           TTGCTGGTTTACCTGAGCACTCAGTACAAGTGATTGAAACTTCTGACCGTGCAGCGGTTG 586
                                                                      TAATTGAGCGTGTAACCAACGAAGCTCGTATTCCTGTGATTAAGCATCTTGATGGTAACT
                                                                                                                                                                   GTCACCTCATTACTATGGCTGAGTATGTAGATGTTATTGTTCCACGTGGTGGTAAAAGCT 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGGGAAAATGCGTGTACCTCTAGGTGTCGTTGGTATGATTTACGAATCACGTCCAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Application US/09328352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5.5%;
74.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     48.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 140; DB 4; Length 256; Pred. No. 2.3e-31; 0; Mismatches 60; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 131.2; DB 4;
Pred. No. 2.6e-28;
0; Mismatches 453;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         80
                                                                                                                                                                                                                                                                                                                   1524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

```
RESULT 9
US-09-557-884-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Application US/09557884
Patent No. 6506581
GENERAL INFORMATION:
APPLICANT: Fleischmann et al.
                                                                                                                                             COMPUTER READABLE FORM:

MEDIUM TYPE: 3 1/2 inch diskette

COMPUTER: Dell Pentium

OPERATING SYSTEM: MS DOS v6.22

SOFTWARE: ASCII TEXT

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/557,884

FILING DATE: 25-Apr-2000

CLASSIFICATION DATA:

PRIOR APPLICATION DATA:

OR APPLICATION DATA:

OR APPLICATION DATA:

OR APPLICATION DATA:
APPLICATION NUMBER: 08/476,102
FILING DATE: JUN-5-1995
ATTORNEY/AGRNT INFORMATION:
NAME: Michelle S. Marks
REGISTRATION NUMBER: 41,971
REFERENCE/DOCKET NUMBER: 4971
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: The Nucleotide sequence of the Haemophilus influenzae Thereof, and Uses Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
ADDRESSEE: Human Genome Sciences,
STREET: 9410 Key West Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2173 TOTTGCGAGGACGTGGGCAAGT 2194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1933 CAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGATTGTATCGTCACTACAG 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1873 CATTICATCATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTGATGATGTTCAAT 1932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1813 GAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTCTGGGATTTCCAAAAGCTGTTT 1872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1762 TTATGAAGAGT------CCAGGCCTTGACGACATATTAGTAGCACTAAAAAACAGA---AG 1812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1702 CAAAAACTGATTACCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATC 1761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     887 GTGGTTGCCCAGÁAACACGTCGTÁTTTTAGGAÁGCTCTGTAAAACCTGCGÁCÁGAAGAAG 946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     707 GTCATGTGTTTGTAGAAGCACAAGCGGACTTACAAAAAGCGTTACCAATTACCTTGAATG 766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATCAACTCGTTTTGCCGATGGCTTTGAATATGGTTTAGGTGCTGAAATTGGTATCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAACTACACGATGGA 2172
                                                                                                                                                                                                                                                                                                                                                                                                    STATE: MD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGTGTTAGGTGACGGTCAAAT 1268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGATAAGATTCATGCACGCGGCCCTGTTGGCTTAGAAGGTTTAACTTCTCAAAAATGGA 1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAGTACGAGATTCTCTGATGGGGCTCGTTTTTGGATTGGGTGCTGAGGTTCGCCATAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTATACTTTGGCACGTCAGTTCTTGGCTCGCGTAGATTCAAGCTCCGTCGTAGTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AÁGCÁATTGÁCCATÁTCAACAAATATGGTTCGCATCÁTÁCCGATGCCÁTTGTGÁCAGAGA 1066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTGGTATACCGAATATTTAGGACCGATTCTTGCAGTTAAAGTGGTGAGCGGTATTGATG 1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGCAGAAGTTTTCTTACCACACATTGCTGAGCTTTATGCTGAAAAAACAAGTTGAGTTAC 886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTAAAACACATCGTTACGGCGTTTGTÄÄTGCAÄTGGAAACTCTGCTCGTTGÄTGÄAAÄÄAA 826
                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: Rockville
                                                                                                                                                                                                                                                                                                                                                               20850
                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rd Genome, Fragments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2052
                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                      밁
                                                                                                         S
                                                                                                                                                      밁
                                                                                                                                                                                         S
                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ક
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
```

```
US-09-557-884-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPAX: 301-309-8439
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1830121 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 537; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1312712 GCGGACTTAAAATCGAACGCGTÁCGCACTCCGCTÁGGCGTCATTGGTÁCAATTTATGAAG 1312653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1312892 TTÁTCTTAGCCGÁAÁÁCGCÁAAAGÁTATTGAACTTGCCAAACAAAATGGATTATCGGATG 1312833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1312952 CTGCTGAAAAAAATTGTGCATTATTGCAGAACAACTCGAACAACAACAACACCGC 1312893
                                                                                                                  1312352 GTGTGGGTGTTTGTCATACTTTCGTTGAAAAAAGTGCGGATCAAAATAAAGCGATTTTTG 1312293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1312412 GTGGTTCGGGTTTACATGAATTGTGTAAACAACATTCGACTATTCCTGTTATTGTGGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match 4.9%; Score 125.8; DB 4; Length 1830121; Local Similarity 45.9%; Pred. No. 1.2e-24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1039 CAGAGGAACGAAAAAAGATATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATT 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE DESCRIPTION: SEQ ID NO: 1:
                                 1852 TGGGATTTCCAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATGGCCTGCACTGTTG 1911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGATGGTATATGCCACGTATATATTGACAAATCAGCTGACATGGATATGGCAAAACTTA 1689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGAACTCGTTATGCAATTATTAAAACTGGATCGCTATGTGGATATGATTATTCCTCGTG 1312413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCACTCCAAGAG 1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTTTACGCGGTGGTAAAGAAACACAGTTTTCTAACAAGATTTTAATCGAAGTTGTGCAAA 1312533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCGCCCAAATGTAACCATTGATGTGGCAAGTCTTTGCCTTAAAACGGGTAATGCAGTGA 1312593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGATTTAGTTCTTGAGAAAAACATCTTGCCCATTAGGTGTTCTCTTTAATTGTTTTTGAGT 1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTTGATTGATCGCTTACTGCTCACACAAGAACGTTTACAAGGCATTGCTAATGATGTAC 1312773
                                                                                                                                                                                                                                                                                   TTCAACATTCTATTGCTGAAGAATTTTTACCTAAACTTGTCTCTCACCTTTCCGCTAAAA 1312173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ÁTGCTTTAGAGCAAGCAGGCTTACCAÁÁATTTGCGGTGCAAGCCATTACCGATCCAÁAACC 1312473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCC-----TTGTTACAACTA 1509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTG 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTC 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCACGTTATTTCTCTAGCAGATCCCCGTGGGGAAAATCATAGACGGCGGTACATTGGATA 1312713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTG 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTC 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGC 1158
                                                                                                                                                                                                   TAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTC 1851
                                                                                                                                                                                                                                                                                                                                                       TTCATAAGGATCTTATGAAGAGTC-------CAGGCCTTGACGACATAT 1791
                                                                                                                                                                                                                                                                                                                                                                                                                                        TTATTGATAACGCCAAAACCCAACGTCCAAGCACCTGTAACACATTGGAAACATTGTTAG 1312233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE: 301-309-8504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches 607; Indels 27; Gaps
1312353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1629
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 10
US-09-643-990A-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
US-09-643-990A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1, Application US/09643990A
Patent No. 6528289
GENERAL INFORMATION:
APPLICANT: Robert D. Fleischme
                                                                                                                                                            TELEFAX: 310-309-8439 INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Owen White
Owen White
Hamilton O. Smith
Lamilton O. Smith
Graig Venter
J. Craig Venter
THE OF INVENTION: The Nucleotide sequence of
the Haemophilus influenzae Rd Ger
Thereof, and Uses Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1312052 TTGTTGTGGAAGATATTCATGCCGCTATTGAGCATATCCGCCAATATGGTACGCAACATT 1311993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1312112 TCTGCGAAGTGACAGAAAAAGAATTGCGAAAAGAATGGGGATCATTGGATTTGAATGTGG 1312053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1311812 CATTAACCAGTTATAAATGGGTTTGTGAAGG 1311782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:

MEDIUM TYPE: 3 1/2 inch diskette

COMPUTER: Dell Pentium

OPERATING SYSTEM: MS DOS v6.22

SOFTWARE: ASCII Text

CURRENT APPLICATION NUMBER: US/09/643,990A

PILING DATE: 23-Aug-2000
                                                                                                                                                                                                 CLASSIFICATION: <Unknown>
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/487,429
FILING DATE: 1995-06-07
APPLICATION NUMBER: 08/426,787
FILING DATE: 1995-04-21
ATTORNEY/ACENT INFORMATION:
NAME: Kenley K. Hoover
REGISTRATION NUMBER: 40,302
REFERENCE/DOCKET NUMBER: PB186F1C1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 301-610-5790
TTLEPHONE: 301-610-5790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1972 CAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATA 2031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2032 GTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1912 AGITTGTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATA 1971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEE: Human Ge
                   TOPOLOGY: linear SEQ ID NO: 1:
                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTCTCTTAACTACACGATGGATCTTGCGAGG 2182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCGCAGAAGTTGCCGTGAGTACCCCAAAAACTTCACGCTCGTGGCCCAATGGGATTAGAAG 1311813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGCAGCCGTTTATGTAAATGCAAGCACACGCTTTACTGATGGCGGACAATTTGGATTAG
                                            LENGTH: 1830121 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STATE: MD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 9410 Key West Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ITY: Rockville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Robert D. Fleischmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genome Sciences, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Genome, Fragments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1311873
```

```
9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                      밁
                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                       당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 537; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 4.9%; Score 125.8; DB 4; Length Best Local Similarity 45:9%; Pred. No. 1.2e-24; Matches 537; Conservative 0; Mismatches 607; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1312772 GCCACGTTATTTCTCTAGCAGATCCCGTGGGGAAAATCATAGACGGCGGTACATTGGATA 1312713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1312952 CTGCTGAAAAAATTGTGCATTATCCATTATTGCAGAACAACTCGAACAACAACAAGCACCGC 1312893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1312652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1312832 CCTTGATTGATCGCTTACTGCTCACACAAGAACGTTTACAAGGCATTGCTAATGATGTAC 1312773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1312892 TTATCTTAGCCGAAAACGCAAAAGATATTGAACTTGCCAAAACAAATGGATTATCGGATG 1312833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1312412 GTGGTTCGGGTTTACATGAATTGTGTAAACAACATTCGACTATTCCTGTTATTGTGGGTG
1312052 TTGTTGTGGAAGATATTCATGCCGCTATTGAGCATATCCGCCAATATGGTACGCAACATT 1311993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1510 GAGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCACTCCAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1459 ATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCC-----TTGTTACAACTA 1509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1279 ATGATTTAGTTCTTGAGAAAACATCTTGCCCCATTAGGTGTTCTCTTAATTGTTTTTGAGT 1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1099 TAATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAGTTTGCTGGATATGAGAAGC 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1039 САСАССАЛАССАЛАЛАЛАСАТАТТССТАСАТСТТССАСАТССТТССАСССАЛАТСАССАТТ 1098
                                                        1972 CAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATA 2031
                                                                                                                                                                                                                                                                                                                                                                                                                                  1792 TAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCACAAAGCTC 1851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1630 CTGATGGTATATGCCACGTATATATTGACAAATCAGCTGACATGGATATGGCAAAACTTA 1689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGTGGGTGTTTGTCATACTTTCGTTGAAAAAAAGTGCGGATCAAAATAAAGCGATTTTTG 1312293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGGACTTAAAATCGAACGCGTACGCACTCCGCTAGGCGTCATTGGTACAATTTATGAAG 1312653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGAACTCGTTATGCAATTATTAAAACTGGATCGCTATGTGGATATGATTATTCCTCGTG 1312413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGCTTTAGAGCAAGCATACCAAAATTTGCGGTGCAAGCCATTACCGATCCAAACC 1312473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTTACGCGGTGGTAAAGAAACACAGTTTTCTAACAAGATTTTAATCGAAGTTGTGCAAA 1312533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCGCCCAAATGTAACCATTGATGTGGCAAGTCTTTGCCTTAAAACGGGTAATGCAGTGA 1312593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTC 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTG 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTC 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCTAAAAGGTGGAAAAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTG 1458
                                                                                                                                                                                        AGITTGITGATGATGITÇAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATA 1971
                                                                                                                                                                                                                                                                                                                                                                          ACGTAAAATATCATGCAAAATCCACCGCACTTAATATATTGAAACAAGCGGGTGCGAATG 1312113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCAACATTCTATTGCTGAAGAATTTTTACCTAAACTTGTCTCTCACCTTTCCGCTAAAA 1312173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTATTGATAACGCCAAAACCCAACGTCCAAGCACCTGTAACACATTGGAAACATTGTTAG 1312233
                                                                                                                                                                                                                                                TCTGCGAAGTGACAGAAAAAGAATTGCGAAAAAGAATGGGGATCATTGGATTTGAATGTGG 1312053
                                                                                                                                                                                                                                                                                                            TGGGATTTCCAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATGGCCTGCACTGTTG 1911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCATAAGGATCTTATGAAGAGTC-------CAGGCCTTGACGACATAT 1791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ттогаатосатосааластоаттасссаосасстоса посавтоса састоста стаста 1749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1830121;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1629
```

```
ORGANISM: Zea mays
FEATURE:
FEATURE:
NAME/KEY: misc feature
OTHER INFORMATION: Incyte ID No. 6476212 700352413H1
NAME/KEY: unsure
LOCATION: 7, 62, 68, 195
OTHER INFORMATION: a, t, c, g, or other
US-09-313-294A-6792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 11
US-09-313-294A-6792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                             RESULT 12
US-08-961-527-22
                                                                                                                                                                                                                                                                                                                                        片
                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: Laigudi, Raghunath V.
APPLICANT: Ito, Laura Y.
APPLICANT: Sherman, Bradley K.
TITLE OF INVENTION: POLYNUCLECTIDES AND POLYPEPTIDES DERIVED FROM CORN EAR
FILE REFERENCE: PL-0017 US
                                                                                                                                                                     Sequence 22, Application US/08961527
Patent No. 6420135
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: PEI
SEQ ID NO 6792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 6792, Application US/09313294A
Patent No. 6476212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION NUMBER: US/09/313,294A
CURRENT FILING DATE: 1999-05-14
NUMBER OF SEQ ID NOS: 7600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ENGTH: 294
                                                              ADDRESSEE: Human Gen
                                                                                                         APPLICANT: Charles Kunsch TITLE OF INVENTION: Streptococcus pneumoniae Polynucleotides and Sequences NUMBER OF SEQUENCES: 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1311872 GCGCAGAAGTTGCCGTGÁGTÁCCCAAAAACTTCACGCTCGTGGCCCAATGGGATTAGAAG 1311813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1311932 CGGCAGCCGTTTATGTAAATGCAAGCACACGCTTTACTGATGGCGGACAATTTGGATTAG 1311873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1311812 CATTAACCAGTTATAAATGGGTTTGTGAAGG 1311782
                                        STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2152 GTCTCTTAACTACACGATGGATCTTGCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2032 GTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGG 2091
                                                                                                                                                                                                                                                                                                                                      258
                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   154 TCAAGGTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          214 GAGCTCTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         157;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94 TCGCCATGGCGAGCGTCGACCCGGTCCCGGAGCTTCGTGAGGGGACGTGAAGCGCGTCATCA 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              78 TGGCCATGGAGACCGCCGATCCTGCCCGTGCATTCGTGAAGGACGTCAAGCGAATCATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAG 2151
                   Rockville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PERL Program
                                                                                                                                                                                                                                                                                                                                                                                    CCTCAGGTGCTGTTGGAGTGGGGCGACAGCGACT 307
                                                                                                                                                                                                                                                                                                                                        CCTCAGGAGCTGTTGGTGTTGGGAGGCAGAGGCT 291
                                                                                                                                                                                                                                                                                                                                                                                                                            GTTCTCTCTGTGAACAGGTGAAGCAACTGAATTTTCAAGGGTATGAGGTGATTCTGGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAAGGTGGGCACGGCTGTTGTCACTGGCATGAATGGCCGATTGGCCATGGGGAAGGCNCG
Maryland
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                   Human Genome Sciences, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.8%;
73.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 123.4; DE
Pred. No. 2e-26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 4; Length 294;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     213
                                                                                                                                                                                                                                                                                                                                                                                                                                    257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                              5
                                                                                                                맑
                                                                                                                                                         Ş
                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-961-527-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 544; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 4.3%;
Best Local Similarity 47.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE: (301) 309-8504
TELEPAX: (301) 309-8512
INFORMATION FOR SEQ ID NO: 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Brookes, A. Anders
REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: PB
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 424
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: ASCII Text CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ILECOLE: (301)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS: don
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ÓPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                        6199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6020 -ATGTTGGATCGTCTTTATTTGGATGCAGATCGTATAGAAGCGATGGCAAGAGGAATTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1040 AGAGGAACGAAAAAAGATATTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTT 1099
                          6439 AGGAGCTGGCTTGATCAATGCAGTGGTTGAGAATGCGATTGTACCTGTTATCGAGACAGG 6498
                                                                1571 AAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGC 1630
                                                                                                                                                                                                                                                                                                                                      1400 ССТАЛАЛЯ СТІСАЛАЛА САЛЕ СТАТСАВАТСЬ В ССЕТАТ ПОСТАТА В СТЕТАТЬ В 1455
                                                                                                                                                                                                                                                                                                                                                                                                                                 1340 CCGACCTGATGCCTTGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCT 1399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1100 AATAAGGTCTGAGAATGAAGCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCC 1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5902 AGAAGTGAAAAACCAAGCCTTGCTAGCCATGGCTGATCACTTAGTGGCTGCTACTGAGGA 5961
                                                                                                                                                            1511 AGATGAGATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCACTCCAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nucleic acid
                                                                                                                                                                                                       GGGCTTGGAGACGACTACTATTCATCCAAATGTGATTCAACTGGTGGAGGATACTAGCCG
                                                                                                                                                                                                                                                                                                TCTTCGTAGTGGTAAGGATGCCTATCAAACAACCCATGCCATTGTCACAGCCTTGAAGAA 6318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOATTTAGTTCTTGAGAAAACATCTTGCCCATTAGGTGTTCTCTTTAATTGTTTTTGAGTC 1339
                                                                                                                                                                                                                                                                                                                                                                                        CCGTCCAAATGTGACGTCTGATGCGGCTGCTTTGACTCTTAAGAGTGGAAATGCGGTTGT 6258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGAAGTGGTTGCCTTACCAGATCCAATCGGTGAAGTTTTAGAAACAAGTCAGCTTGAAAA 6138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TACCCTTGCAAATATGGAAGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGA 1279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTGGTTGCTAGATTGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCG 1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATTTTAGCGGCTAATGCCCTCGATATGGCAGCGGCTAAGGGGAAAATCTCAGATGTG-- 6019
                                                                                                                TGAAAGTAGTTATGCTATGATGAAGGCCAAGGGCTATCTAGACCTTCTCATTCCTCGTGG
                                                                                                                                                                                                                                                  ----CTGATGCTATTCCTCGTAATGTTGGTGAAAAACTTATTGGCCTTGTTACAACTAG 1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGTTTGGTTATCACAAAAAAACGTGTAGCTATGGGTGTCATCGGTATTATCTATGAAAG 6198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  E: Diskette, 3.50 inch, 1.4Mb storage HP Vectra 486/33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MSDOS version 6.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US/08/961,527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches 565; Indels 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PB340P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 109; DB 4;
Pred. No. 7.2e-21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 4; Length 28171;
```

Gaps

6

6078

6378

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
밁
                                                              Ś
                                                                                                                                    밁
                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                             ; TYPE: DNA
; ORGANISM: Lactobacillus rhamnosus
US-09-724-623-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 13
US-09-724-623-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT FILING DATE: 2000-11-28

NUMBER OF SEQ ID NOS: 124

SOFTWARE: FASTSEQ for Windows Version

SEQ ID NO 44

LENGTU- 1-28

L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Glenn, Matthew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 44, Application US/09724623 Patent No. 6476209
                                                                                                                                                                                                                                                                            Matches 470;
                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Glenn, Matthew
APPLICANT: Lubbers, Mark W
APPLICANT: Dekker, James
TITLE OF INVENTION: Polymucleotides, materials incorporating
TITLE OF INVENTION: them, and methods for using them.
                                                                                                                                                                                                                                                                         / Match 3.1%;
Local Similarity 44.5%;
hes 470; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7039 GAAAG 7043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2147 TGAAG 2151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6979 TCTTGGTTGTGAAATGGGGATTTCTACTCAGAAATTGCACGCGCGTGGTCCCATGGGCTT 7038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  6919 GGACTCTGCAGCGGTGTATGTTAATGCCTCAACTCGTTTCACAGATGGAGGACAATTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1967 TCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGT 2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6799 TGTTAAGGTTGTGAGCAGTTTAGAAGAAGCGGTTGCGCACATTGAATCCCACAGCACCCA 6858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6739 TTCAGGTCAAGCAGCTGAGACCCAAGACTTTGACACCGAGTTTTTAGACTATGTCCTTGC 6798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1853 GGGATTTCCAAAAGCTGTTTC-----ATTTCATCATGAGTATAGTTCTATGGCCTGCAC 1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1805 AACAGAAGGAG-----TTAATATTTATGGTGGACCTATTGCGCACAAAGCTCT 1852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1751 TCAT-----AAGGATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCACTAAA 1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6559 CATCAACAATGCTAAAACCAGTCGTCCTTCTGTTTGTAATGCCATGGAGGTTCTGCTGGT 6618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1691 TGTAATGGATGCAAAAACTGATTACCCAGCAGCCTGCAATGCAATGGAGACCTTACTAGT 1750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6499 GACTGGGATTGTCCÁTGTCTÁTGTGGÁTAAGGATGCAGÁCGAAGACÁAGGCGCTGTCTAT 6558
                                                                                                                                                                                                      1167 GCTAGATTGACTATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTT 1226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2087 ATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCCATGCCCGTGGACCAGTGGGTGT 2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2027 TGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGG 2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1631 TGATGGTATATGCCACGTATATATTGACAAATCAGCTGACATGGATATGGCAAAACTTAT 1690
                                                                  1227 GCAAATATGGAAGACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTA 1286
       GCCGCCTTACCTGATCCAACCGCCCAGACGGATAAGGCCTGGGTGAATCACGCAGGACTG 321
                                                                                                                                    GATCGATTGGTACTGACAGCCGAGCGGATTGCTGACATGGCAGCAGGGGTTCGCCAAGTT 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCATTCGGATGCTATTGTGACGGAAAATGCTGAAGCTGCAGCATACTTTACAGATCAAGT 6918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTTGAGTTTGATGATGATGATCAATCAGCAATTGACCATATTCATCGTTATGGAAGTGC 1966
                                                                                                                                                                                                                                                                         Score 80; DB 4; Length 1254;
Pred. No. 3.4e-13;
0; Mismatches 565; Indels :
                                                                                                                                                                                                                                                                            21; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
```

```
1869 GTTTCATTCATCATGAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTGATGATGTT 1928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1518 ATCGCAGATTTGCTAAAGCTTGATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAAT 1577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1407 GGTGGAAAAGAAGCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATT 1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1347 GATGCCTTGGTTCAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAA 1406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1287 GTTCTTGAGAAAACATCTTGCCCCATTAGGTGTTCTCTTTAATTGTTTTTTGAGTCCCGACCT 1346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1818 AATATTTATGGTGGACCTATTGCGCACAAAGCTCTGGG-----ATTTCCAAAAGCT 1868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1758 GATCTTATGAAGAGTCCAGGCCTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTT 1817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1638 ATATGCCACGTATATATTGACAAATCAGCTGACATGGATATGGCAAAACTTATTGTAATG 1697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1578 AAGCTTGTCTCTCAAATCAAGGCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGT 1637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1467 CCTCGTAATGTTGGTGAAAAA-----CTTATTGGCCTTGTTACAACTAGAGATGAG 1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1989 ACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAGTTGATAGTGCTGCTGTATTTCAT 2048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1929 CAATCAGCAATTGACCATATTCATCGTTATGGAAGTGCTCATACAGATTGTATCGTCACT 1988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               322 AATATTGCGCAAAAACGGGTACCTTTAGGGGTGGGTCGGGATGATTTATGAGGCCCGGCCA 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            919 GAAGACTGGGATACCGAATATAATGACTTAATTATGGCGGTCAAGGTGGTGGATTCCGAG 978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         382 AATGTAACCGTTGATGCTGCGGTTAACTTTTTAAAAGTGGCAATGCGGTCATTCTCCGT 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       859 GÁATTGCGCGGTGATGAACGGGCGCGGCAATTGTGCCGAACATGCAGATCGCCACGGAA 918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            802 GATGTTGCAAA---CGCGCAGCTGCCTTTAATTGCTGCGGCACTGCAAGCGCATGGTGTC 858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             742 AÁCGCCAAAGTTCÁGCGGCCGTCTGTTTGCAATGCGGCCGAGAAACTTTTAATCCACGCT 801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             682 AATTGTCACATTTATGTTGATGCGTATGCGCAAGCCCAGATGGCAATCGACATTGTTGTC 741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        562 GCGAATCAGATGCACCTGAATGGCTACATTGATGTGCTGATTCCGCGTGGTGGCCGA 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   502 ACCGCACAAGGATTGCCAAAAGACGCGATTCAATTAATCACGGACCCGAAGCGAGAAGTC 561
                                                                                       TGGATCTTGCGAGGACGTGGGCAAGTGGTGAATGGT 2204
                                                                                                                                                                                                                                                                                                                                                                                                AATGCCTCAACTCGGTTTACAGACGGCTTCGAGTTCGGTTTCGGCGCAGAGATCGGTATT 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATA 2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATAACTACCAAAATAGTCAGCAATTCCTCCAACAGGTAGATGCGGCTGTTGTCTATGTG 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGAAGCGATTGCGCATATCAACGCACACAACACGAAGCACAGCGAGGCCATCATTACG 1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGCGGTAAAGAGGCGCTGCACAGCAATTTGGCCTTGGCGACCGTTTTACAGGCTGCATTG
TATCAGGTGCTGGGTAACGGACAGGTACGCGAAGGT 1254
                                                                                                                                                                                          AGTACGCAAAAATTACACGCACGCGGACCGATGGGGGTTAGCGGCGTTGACGACGATTAAG 1218
                                                                                                                                                                                                                                                                                       AGCACAGGGCGTATCCATGCCCGTGGACCAGTGGGTGTTGAAGGTCTCTTAACTACACGA 2168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         501
```

```
RESULT 14
US-09-107-532A-2515
; Sequence 2515, Application US/09107532A
; Patent No. 6583275
; GENERAL INFORMATION:
APPLICANT: Lynn A Doucette-Stamm and David Bush
; TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO
```

```
, NAME/KEY: misc_feature;
LOCATION: (B) LOCATION 1...462;
SEQUENCE DESCRIPTION: SEQ ID NO: 2515;
US-09-107-532A-2515
                                     S
                                                                                              밁
                                                                                                                                           á
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 2.9%; Score 74.6; DB 4; Length 462; Best Local Similarity 53.6%; Pred. No. 6.9e-12; Matches 155; Conservative 0; Mismatches 134; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: 2515:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:

APPLICATION NUMBER: 60/085,598

FILING DATE: 14 May 1998

APPLICATION NUMBER: 60/051571

FILING DATE: July 2, 1997

ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/107,532A
FILING DATE: 30-Jun-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LENGTH: 462 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: circular
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
ADDRESSEE: GENOME THERAPEUTICS CORPORATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ENTEROCOCCUS FAECIUM FOR DIAGNOSTICS AND THERAPEUTICS NUMBER OF SEQUENCES: 7310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ANTI-SENSE: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Ariniello, Pamela Deneke REGISTRATION NUMBER: 40,489
REFERENCE/DOCKET NUMBER: GTC-012
TELECOMMUNICATION IMFORMATION:
TELEPHONE: (781)893-5007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                        1966 CTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGAG 2025
                                                                                                                                                                                                                                                                                                                                                                                                                                                      1906 CTGTTGAGTTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTATGGAAGTG 1965
                                                2146 TIGAAGGICTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGT 2194
                                                                                                                                                                                                                                                  2026 TIGATAGIGCIGCIGIATITCATAATGCAAGTACGAGATICTCIGATGGGGGCTCGTTITG
                                                                                                                                                                                                       284 TGGACGCGGCGGCTGTCTATGTCAATGCCTCCACTCGTTTTACAGACGGATCGGTATTTG
404
                                                                                                                                                                                                                                                                                                     224 AACATTCAGAAACGATCGTGACAGATAGTTATGCGGCTAGTCAACGTTTCTTAAATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                      164 CTGTCAAAGTGGTCGATTCTTTGGATGAAGCAATTGCACATATCAATCGGCATAATACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM: <Unknown>
SOFTWARE: ASCII
                                                                                                GTTTTGGTGCAGAGATTGGTÄTCTCTÄCTCAAAAGTTGCATGCCCGTGGTCCAATGGGGT
                                                                                                                                              GATTGGGTGCTGAGGTTGGCATAAGCACAGGGGGGTATCCATGCCCGTGGACCAGTGGGTG 2145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Enterococcus faecium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (781)893-50
TELEFAX: (781)893-8277
TAAATGAATTAACTTCCACAAAATATATCATTTATGGCGATGGACAAAT 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TY: Waltham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100 Beaver Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                       343
                                                                                                                                                                                                                                                                                                                                                                                                           223
                                                                                                                                                                                                                                                                                                          283
                                                                                                                                                                                                                                                          2085
```

```
밁
                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                             Ś
                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-103-840A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2, Application US/09103840A Patent No. 6294328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 161; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: WHITE, Owen R.
APPLICANT: VENTER, Claire M.
APPLICANT: VENTER, John C.
TITLE OF INVENTION: DA SEQUENCES FOR STRAIN ANALYSIS IN MYCOBACTERIUM
TITLE OF INVENTION: TUBERCULOSIS
TITLE REPERENCE: 24366-20007.00
CURRENT FILLING DATE: 1998-06-24
NUMBER OF SEQ ID NOS: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: FLEISCHMAN, Robert D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OTHER INFORMATION: CDC 1551 OTHER INFORMATION: "n" bases at various positions throughout the sequence OTHER INFORMATION: represent a, t, c or g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Mycobacterium tuberculosis FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ENGTH: 4403765
2721065 GCCGGCCA 2721058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2721365 GAATACCTGTCGCTGGACATCGCGGTGGTCGACGGTGTCGACGCTGCCATCGCC 2721306
                                                                                                                                                                                                                                                                                                      2721245
                                                                                                                                                                                                                                                                                                                                                                                                         Y Match 2.9%;
Local Similarity 52.3%;
                                                                                                                                                                                                                                                                                                                                                      2004 GCAGAGACTITICTACGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGA 2063
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1944 CATATTCATCGTTATGGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTA 2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1884 GAGTATAGTTCTATGGCCTGCACTGTTGAGTTTGTTGATGATGTTCAATCAGCAATTGAC 1943
                                                  2184 CGTGGGCA 2191
                                                                                                  CATGCCCGCGGACCGATGGGACTACCGGAATTGACGTCGACCAAGTGGATCGCATGGGGA 2721066
                                                                                                                                                CATECCCGTEGACCAGTEGETGAAGGTCTCTTAACTACACGATEGATCTTGCGAGGA 2183
                                                                                                                                                                                                                                                   TICTCTGATGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATC 2123
                                                                                                                                                                                                                                                                                                      GCCCAACGCTTTACCGAACAGATCGATGCGGCGGCGGTGATGGTGAACGCATCAACGGCG 2721186
                                                                                                                                                                                                     TTCACCGACGGCGAGCAATTCGGCTTCGGCGCCGAGATCGGCATCTCCACCCAGAAACTG 2721126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 72.8; DB 3;
Pred. No. 9.6e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               147; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 4403765;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

Search completed: March 10, 2004, 12:06:50 Job time : 200.536 secs

RESULT 15 US-09-103-840A-2/c

```
GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.
```

Database : Post-processing: Minimum Match 0% Maximum Match 100% Minimum DB seq length: 0
Maximum DB seq length: 200000000 Scoring table: Sequence: Title: Perfect score: Run on: OM nucleic - nucleic search, using sw model Total number of hits satisfying chosen parameters: Searched: March 10, 2004, 10:31:30 ; Search time 9652.81 Seconds (without alignments) 11544.306 Million cell updates/sec IDENTITY_NUC
Gapop 10.0 , Gapext 1.0 3470272 seqs, 21671516995 residues US-10-026-767-2 2571 1 ctgatatttattttcttacc.....tcaagatactactacttttc 2571 GenEmbl:* Listing first 45 summaries gb_pat:*
gb_ph:*
gb_pl:*
gb_pl:*
gb_pl:*
gb_pr:*
gb_sts:*
gb_sts:*
gb_sts:*
gb_sts:*
gb_sts:*
em_ba:*
em_hum:*
em_hum:*
em_ow:*
em_ow: em_htgo_hum:*
em_htgo_mus:*
em_htgo_other:* ap ov: 6940544

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		α			Resul No
444440 0 4 3 4 5	1004D01B01) 4 70 70 70 90 0 4 	4 N G F B B O H G P	- 444444444444444444444444444444444444	1 . (1
318.8 317.2 285.2 232.8	20000000000000000000000000000000000000		2243.8 228.6 1203 198.6 1184.2 1181 1186.8 156.8 156.8		Score
112 112 111 9	1331156	112333441 12341 1244 127	444444444444444444444444444444444444444	1 00 00 00 00 00 00 00 00 00 00 00 00 00	Query Match
ω 4		ω		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Length
				, a v a a a a a a a a a a a a a a a	Bd
BC03769 BC03342 AF05657 AY069110 AF101424 BX572091	MSP5CS2 MTR2786 HSU6879 AF50391 HSU7654 HSP5CS AF0569 ATH27569		ADU92286 SLU60267 VVI5686 AB056452 AF067967 MTR278818 I47781 VIRPYRR VIRPYRR AK102633	10000000000000000000000000000000000000	ID
37699 Mus 33427 Mus 56573 Mus 9110 Drosc 1424 Cichc 2091 Proch	422 M.sativ 78820 Medic 758 Human p 03911 Suaed 542 Human p 453 H.sapie 056574 Mus 056574 Mus	267 267 0123 01230 01285 01985 97403 97403	286 ACTINICA 267 Solanum 05686 Vitis 56452 Vigna 67967 Mesemb 78818 Medica 781 Sequence 276 Vigna ac 02633 Oryza	2463 138 138 1777 1481 1481 1481	Description

ALIGNMENTS

REFERENCE AUTHORS		ORGANISM	SOURCE	KEYWORDS	VERSION	ACCESSION	DEFINITION	Locus	RESULT 1 AF424633
<pre>1 (bases 1 to 2630) Shinn,P., Chen,H., Cheuk,R., Kim,C.J., Koesema,E., Meyers,M.C., Banh,J., Bowser,L., Carninci,P., Dale,J.M., Goldsmith,A.D.,</pre>	Eukaryota; Viridiplantae; Streptopnyta; Embryopnyta; Tracneopnyta; Spermatophyta; Magmoliophyta; eddicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.	Arabidopsis thaliana	Arabidopsis thaliana (thale cress)	FLI_CDNA.	AF424633.1 GI:15983516	AF424633	Arabidopsis thaliana At2g39800/T5I7.10 mRNA, complete cds.	AF424633 2630 bp mRNA linear PLN 08-OCT-2001	

TITLE

0

Gaps

73 60

```
JOURNAL REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                        3'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Shinn, F., Chen, H., Cheuk, R., Kim, C.J., Koesema, E., Meyers, M.C., Banh, J., Bowser, L., Carninci, P., Dale, J.M., Goldsmith, A.D., Hayashizaki, Y., Ishida, J., Jiang, P.X., Jones, T., Kamiya, A., Karlin-Neumann, G., Kawai, J., Lam, B., Lee, J.M., Lin, J., Liu, S.X., Palm, C.J., Palm, C.J., Palm, C.J., Palm, C.J., Palm, P.K., Quach, H.L., Sakurai, T., Satou, M., Seki, M., Southwick, A., Pang, C.C., Toriuni, M., Yamada, K., Yamamurza, Y., Yu, G., Yu, S., Shinozaki, K., Davis, R.W., Theologis, A. and Ecker, J.R. Slinozaki, K., Davis, R.W., Theologis, A. and Ecker, J.R. Shinozaki, K., Davis, R.W., Theologis, A. and Ecker, J.R. Shinozaki, K., Davis, R.W., Theologis, A. and Ecker, J.R. Shinozaki, Plant Biology Laboratory, The Salk Institute for Sliological Studies, 10010 N. Torrey Pines Road, La Jolla, CA 92037, 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The Salk, Stanford, PGEC (SSP) Consortium members carried out the sequencing and annotation of the RAFI CDNAS: Shinn,P., Chen,H., Cheuk,R., Kin,C.J., Koesema,E., Meyers,M.C., Banh,J. Boweer,L., Dale,J.M., Goldsmith,A.D., Jiang,P.X., Jones,T., Karlin-Neumann,G., Lam,B., Lee,J.M., Lin,J., Liu,S.X., Miranda,M., Nguyen,M., Cham,B., Lee,J.M., Lin,J., Liu,S.X., Miranda,M., Nguyen,M., Chodera,C.S., Palm,C.J., Pham,P.X., Quach,H.L., Southwick,A., Tang,C.C., Toriumi,M., Yamada,K., Yamamura, Y., Yu,G., Yu,S., Davis,R.W., Theologis,A., and Ecker,J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hayashizaki,Y., Ishida,J., Jiang,P.X., Jones,T., Kamiya,A., Kariin-Neumann,G., Kawai,J., Lam,B., Lee,J.M., Lin,J., Liu,S.X., Miranda,M., Narusaka,M., Nguyen,M., Onodera,C.S., Palan,C.J., Pham,P.K., Quach,H.L., Sakurai,T., Satou,M., Seki,M., Southwick,A., Tang,C.C., Toriumi,M., Yamada,K., Yamamura,Y., Yu,G., Yu,S., Shinozaki,K., Davis,R.W., Theologis,A. and Ecker,J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shinn,P. (SSP/Salk) and Seki,M. (RIKEN GSC) contributed equally to this work. Shinozaki,K. (RIKEN GSC) and Ecker,J.R. (SSP/Salk) contributed equally to this work as PIs.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         collection and clustering of RAFL cDWAs (RAFL cDWA: 'RIKEN Arabidopsis Full-Length cDWA'): Seki,M., Narusaka,M., Ishida,J., Satou,M., Kamiya,A., Sakurai,T., Carninci,P., Kawai,J., Hayashizaki,Y. and Shinozaki,K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RIKEN Genomic Sciences Center (GSC) members carried out the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Arabidopsis cDNA clones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases
                                                                                                              TRAPY YODS GIFWONDS LAALLAELKADLIILLS DVELYTEER VERVEN TERRAPY ODS GIFWONDS CANDER VOLKETYKSMLDIEV IP IT WENDALIS TRAPY YODS GIFWONDS LAALLAELKADLIILLS DVELYTEEP SDRAKKLIFTEV KEKHODEIT GOKKSLLGEGGMTAKVKAANNAAVAAIP VIIT SGYSAENID KVLRGLEV GTLFHODARLMAPITOSNARDENAVARISESSEKKLOALS SEDRKKLLID IADALEANVTI IKAENELDVAS AQEAGLEES MVARLVMTPGKIS SLAAS VRKLADMEDPIGR VLKKTEV ADGLVLEKTSS PLGVLLIVFESREP DALVOIASLARS GROLLLKGGKEARRSNAILEK VITDAIP ETVGGKLIGLVFESREP DALVOIASLARS GROLLLKGGKEARRSNAILEK VITDAIP ETVGGKLIGLVTSREEIP DOLKLDDVID LVIPRGSNALTVOIKSTKIPVL GHADGICHVYUDKACUTIMAKRIVSDAKLDYPAACNAMETILVHKDLEQNAVLNELIF ALGSNGYTLYGGPRASKILNIP BRARS FYHEY CAKACTUFVEDVYGAIDHIHRHGSAH TDCIVTEDHEVAELFLRQVDSAAVFHNASTRESDGFRFGLGAEVGVSTGRIHARGPVG VEGLLITRWINKGKGQVVDGDNGIVYTHQDIP IQA"
2274. 2630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /product="At2g39800/T517.10"
/protein_id="AAL11626.1"
/db_xref="G1:15983517"
/translation="MEELDRSRAFARDVKRIVVKVGTAVVTGKGGRLALGRLGALCEQ
LAELNSDGFEVILVSSGAVGLGRQRLRYRQLVNSSFADLQKPQTELDGKACAGVCQSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db xref="taxon:3702"
/chromosome="2"
/clone="RAFL99-01-Bl3(R14433)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 to 2630)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 note="delta-1-pyrroline 5-carboxylase synthetase (P5C1)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           codon_start=1
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ype="Columbia"
Score 2571;
Pred. No. 0;
                                  DB 8;
                                  Length 2630;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멇
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 벟
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                        Ş
                                                                                                                        멼
                                                                                                                                                                             $
                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       맑
            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 2571; Conservative
            1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 134
                                                                                                                              974
                                                                                                                                                                                    961
                                                                                                                                                                                                                                                914
                                                                                                                                                                                                                                                                                                     901
                                                                                                                                                                                                                                                                                                                                                                  854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 CTGATATTTATTTTCTTACCTTAAATACGACGGTGCTTCACTGAGTCCGACTCAGTTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGATATTTATTTTCTTACCTTAAATACGACGGTGCTTCACTGAGTCCGACTCAGTTAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGTTCCTCTCTCTGTGTGTGTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAACTGAAAGCTGATCTTCTGAGTCTTCTGAGCGATGTTGAAGGTCTTTACACAGGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTACTATGAGACTATGTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTTGGGACAGCAGT
                                                                                                                                                                                                                                                                                                     GAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACTGCAAAAGTCAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACTGCAAAAGTCAAAGC 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTACACAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCT
            TTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAATTCTGCTTGATATTGC 1093
                                                                  TTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATTCTGCTTGATATTGC 1080
                                                                                                                                                                                       TITATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAG 1020
                                                                                                                                                                                                                                                GAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                       TGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTGA 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ТССААGТGАТССТААСТСАААGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGA 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCC
                                                                                                                              TTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAG 1033
                                                                                                                                                                                                                                                                                                                                                                  TGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
```

660 613 600

673

733

960

913

853

540 493 480 433 420 373 313 300 253 240 193

FEATURES

ORIGIN

COMMENT

2101 2114	2041	1981 1994	1921 1934	1861	1801 1814	1741 1754	1681 1694	1621 1634	1561 1574	1501 1514	1441 1454	1381 1394	ωω	1261 1274	1201 1214	1141 1154	
TGCAGAGGTGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGGGTCGAAGG 2	CGCTGCTGTGTTCCACAACGCCAGAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGG 2	AGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAG 2	AGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGTGCACACAC 1	GAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGA 1	TTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAGTAAGATACT 1	GATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTAT 1 	GGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGC 1 	CCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATAC 1 	TCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAAATACTACAAAAAT 1 	TGGACTTGTGACTTCAAGAGAAGAGTTCCTGATTTGCTTAAGCTTGATGACGTTATCGA 1	TGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGTAAACTCAT 1 	TGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCGATCAAA 1	AGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACT 1	TGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTT	GATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAGCTGATATGGAAGATCCAATCGGCCG 1	TGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGAAA 1	TAGATGTAGCTTC 1
160	100 113	040 053	980 993	920 933	860 873	800	740 753	680 693	620 633	560 573	500 513	440 453	380	320 333	260 273	200	140 153

```
Ś
                                                                                                                   KEYWORDS
SOURCE
                                                                                                                                                                                                                                                    RESULT 2
AY080771
                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                    REFERENCE
                                                                                                                                                      VERSION
                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                               DEFINITION
AUTHORS
                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2161
                                                                                                                                                                                                                                                                                                                                                                                                             2474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2174 ATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTCGACGGAGACAATGG
                                                                                                                                                                        2600 bp mRNA linear PLN 18-SE
Arabidopsis thaliana putative delta-1-pyrroline 5-carboxylase
synthetase P5C1 (At2g39800) mRNA, complete cds.
AY080771
                                                   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
                                                                                              Arabidopsis thaliana
                                                                                                             Arabidopsis thaliana (thale cress)
                                                                                                                                                      AY080771.1 GI:19423915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTCGACGGAGACAATGG
                                                                                                                                                                                                                                                                                                                                                       TIGTAAGCTACCTACACATTTCIGATCTTTAICAAGATACTACTACTTTTC 2571
                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCACTTAGTCTTGCTCATAAGTACGATGAAGAACATTTAATTAGCTTCTCTTCTTGTCA 2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTIGTGTAITTGGTTGAGACTTGAGGAGACACAGAGGAGGATGGGCTTTTTTGTTTCC 2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAAACAAGACTTCCGAGTGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAAACAAGACTTCCGAGTGTGTG
                                                                                                                                                                                                                                                                                                                               TIGTAAGCTACCTACACATTTCTGATCTTTATCAAGATACTACTTTTTC
                                                                                                                                                                                                                                                                                                                                                                                                             ACCACTTAGTCTTGCTCATAAGTACGATGAAGAACATTTAATTAGCTTCTCTTCTTGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCGCTTATGTAGTGGTTTTGATTTAGGGTTAGGATTGCACCAAAAATAAGATCCACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCGCTTATGTAGTGGTTTTGATTTAGGGTTAGGATTGCACCAAAAATAAGATCCACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTCTGCTTAGTACTCATATCCTATCATTATTATTACTACTACTATTATTGAAACC 2413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTGTGTATTTGGTTGAGACTTGAGGAGAGACACAGAGGAGGATGGGCTTTTTTGTTTCC
                                                                                                                                                                                                                                    PLN 18-SEP-2002
                                                                                                                                                                                                                                                                                                                                   2584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2353
```

음 성 음 성 음 성 음

유 성 유 성 유 성

AV080771
AV080771
Avos0771
Arabidopsis thaliana putative delta-l-pyrroline 5-carboxylase psynthetase PSC1 (At2g39800) mRNA, complete cds.

Avos0771.1 GI:19423915
EXPMORIS
Arabidopsis thaliana (thale cress)
Arabidopsis thaliana

The Salk, Stanford, PGEC (SSP) Consortium members carried out the sequencing and annotation of the RAFL cDNAs: Yamada,K., Banh,J., Chan,M.M., Chang,C.H., Chang,E., Dale,J.M., Deng,J.M.,

```
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                         Query Match
Best Local Sim
Matches 2570;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                                                                                                                                                                                                                                                                                                           3'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
    181
                                              134
                                                                                                                                  74
                                                                                                                                                                              61
                                                                                                                                                                                                                        14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Goldsmith, A.D., Lee, J.M., Onodera, C.S., Quach, H.L., Tang, C.C., Toriuni, M., Wu, H.C., Yamamura, Y., Yu, G., Bowser, L., Chen, H., Cheuk, R., Jones, T., Karlin-Neumann, G., Kim, C., Lam, B., Lin, J., Meyers, M.C., Miranda, M., Nguyen, M., Palm, C.J., Shinn, P., Southwick, A., Davis, R.W., Ecker, J.R. and Theologis, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Yamada, K. (SSP/PGEC) and Seki, M. (RIKEN GSC) contributed equally to this work. Shinozaki, K. (RIKEN GSC) and Theologis, A. (SSP/PGEC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Annotation is based on the January 2002 version of the Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                contributed equally to this work as PIs.
                                                                                                                                                                                                                                                                                                                                   Similarity
    TGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCT
                                                                                                                                                                                                                                                      CTGATATTTATTTTCTTACCTTAAATACGACGGTGCTTCACTGAGTCCGACTCAGTTAAC
                                                                                      TCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGT
                                                                                                                                    TCGTTCCTCTCTGTGTGTGGTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGA
                                                                                                                                                                            TCGTTCCTCTCTCTGTGTGTGGTTTTGGTAGACGACGACGACGACGATAATGGAGGAGCTAGA
                                                                                                                                                                                                                        CTGATATTTATTTTCTTACCTTAAATACGACGGTGCTTCACTGAGTCCGACTCAGTTAAC
                                                TCGTTCACGTACTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGT
                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 submitted to GenBank.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TRRAPYQDSSĞİ FMDNDİLAALLALELKADLLILLSDVEGLYTGPPSDPNSKLİHTFV KEKHQDE İTFÇDKSKLGRGMTAKVKAAVNAAYAĞI EVI İTSÇYSALBI DKVLRGLRV GTLEHQDARLMAP I TDSNARDMAYMARESSRKLQALSSEDRKKILLDI JADALEANUT I KAENBLDVASAQEAĞLEESMWARLVMTFÇKI SSLAASVRKLADMED PI GRVLKKTEV ADĞLVLEKTES PLĞVLLİVFESRPDALVQI ASLAİRSĞNĞLLLKGÇKEARRSNAI LHK VITDAİ PEKTSSPLĞVLLİVFESRPDALVQI ASLAİRSĞNĞLLLKGÇKEARRSNAI LHK VITDAİ PETVGĞKLİĞIVTSRESI PDLLKLDDVIDLVİ PEĞSRKULVTQI NÜTTKI PVL GHADĞI CHVYVDKAÇDTDMAKRI VEDAKLÜV PAAÇNAMETLLVHKDLEQNAVLNELİF ALQSNĞYTLYĞĞÇRASKILNI PEARSFNHEYÇAKAÇTVEVVEDVYĞAI DHİHRHĞSAH TDÇI VTEDHEVAELFLRQVDSAAVFHNASTRISBDĞERFĞLĞAEVGVSTĞRI HARĞPVĞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /codon start=1
/evidence=experimental
/product="putative delta-1-pyrroline 5-carboxylase
synthetase P5C1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="At2g39800"
120. .2273
                                                                                                                                                                                                                                                                                                                                                                                                                                         /replace="g"
2274. .2600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="compared to genomic sequence resulting in
acid_sequence difference"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /trānslation="meeldrsrtfardvkrivvkvgtavvtgkggrlalgrlgalceq
laelnsdgfevilvssgavglgrqrlryrqlvnssfadlqkpqteldgkacagvsqss
lmayyetmfdqldvtaaqllvndssfrdkdfrkqlnetvksmldlrvififnendais
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VEGLLTTRWIMRGKGQVVDGDNGIVYTHQDIPIQA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /protein_id="AAL87255.1"
/db_xref="GI:19423916"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="This clone is in a modified pBluescript vector
(Lambda ZAP) as a XhoI/SstI insert."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="At2g39800"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="At2g39800"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="RAFL05-20-023 (R10455)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           organism="Arabidopsis thaliana"
|mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                'gene="At2g39800"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gene="At2g39800"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ecotype="Columbia"
                                                                                                                                                                                                                                                                                                                                99.9%; Score 2569.4; 100.0%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                     DB 8;
                                                                                                                                                                                                                                                                                                            -
                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                     Length 2600;
                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                    133
                                                                                                                                                                              120
    240
                                                193
                                                                                                                                                                                                                        73
                                                                                                                                                                                                                                                                    60
                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                         S
                                                                     밁
                                                                                                          5
                                                                                                                                                       멼
                                                                                                                                                                                              8
                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                           1261
                                                                                                                                                                                                                                               1094
                                                                                                                                                                                                                                                                                         1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          194
                                                                                                                                                                                                                                                                                                                                                                                                                         974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCTCAGACTGAACTTGATGGGAAAGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCTCAGACTGAACTTGATGCGAAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTACACAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAA 373
GATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAGCTGATATGGAAGATCCAATCGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATAACCAGTGGGTATTCAGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACTGCAAAAGTCAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACTGCAAAAGTCAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGAACTGAAAGCTGATCTTCTGATTCTTGAGCGATGTTGAAGGTCTTTACACAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTACTATGAGACTATGTTTGACCÁGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCT
                                                                        GATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAGCTGATATGGAAGATCCAATCGGCCG
                                                                                                                                                                                                 CGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGTAGCTTC
                                                                                                                                                                                                                                                                                    CGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGTAGCTTC
                                                                                                                                                                                                                                                                                                                                                                             TTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATTCTGCTTGATATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                       TITATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAG
                                                                                                                                                           TGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGAAA
                                                                                                                                                                                                                                                                                                                                TTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATTCTGCTTGATATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  300
                              1320
                                                                        1273
                                                                                                                                                                                                        1200
                                                                                                                                                                                                                                                                                           1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                           1213
                                                                                                                                                                                                                                                                                                                                     1093
                                                                                                                                                                                                                                                                                                                                                                                                                           1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     733
                                                                                                                                                                                                                                                                                                                                                                                 1080
```

Ś 밁 Ś 맑 8 밁 S

S

음 성

음 성

B

```
1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1334 AGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGA 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACT 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGTGCACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAGTAAGATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAGTAAGATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGGAAACCCTTCTTGTGCATÄAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTAT 1813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGC 1753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGC 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAAATACTACAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGACTTGTGACTTCAAGAGAAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGACTTGTGACTTCAAGAGAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGA 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGTAAACTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCGATCAAA 1440
TCTCTGCTTAGTACTCATATCCTATCATTATTATTACTACTACTATTATTGAAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGCTGCTGTTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGTGCACACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAAATACTACAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGTAAACTCAT
                                                                                                                                                                                          AATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAAACAAGACTTCCGAGTGTGTG
                                                                                                                                                                                                                                                                                                              ATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTCGACGGAGACAATGG
                                                                                                                                                                                                                                                                                                                                                                       ATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTCGACGGAGACAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGGGTCGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGCTGCTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAG
                                                                     TTTGTGTATTTGGTTGAGACTTGAGGAGAGACACAGAGGAGGATGGGCTTTTTTGTTTCC
                                                                                                                              TTTGTGTATTTGGTTGAGACTTGAGGAGAGACACAGAGGAGGATGGGCTTTTTTTGTTTCC
                                                                                                                                                                                                                                            AATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAAACAAGACTTCCGAGTGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                TGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGGGTCGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1393
               2400
                                                                                                                                 2340
                                                                                                                                                                                             2293
                                                                                                                                                                                                                                                                                                              2233
                                                                                                                                                                                                                                                                                                                                                                       2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1513
                                                                        2353
                                                                                                                                                                                                                                                      2280
                                                                                                                                                                                                                                                                                                                                                                                                                                   2173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1993
```

8

8 8

8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

2413

음 성 음 성 음 성

8 8 8 8 8 8

```
COMMENT
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATHATPSCS
LOCUS ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                    polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (12-JUL-1994) Yoshu Yoshiba, Hitachi Ltd., Advanced Research Laboratory, Hatcoyama, Hiki-gun, Saitama 350-03, Japan (Tel:0492-96-6111, Fax:0492-96-000 Sep 12, 1996 this sequence version replaced gi:938020.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; roside; euroside II; Brassicales; Brassicaceae; Arabidopsis.

1 (bases 1 to 2571)

1 (bases 1 to 2571)

1 (bases 1 to 2571)

1 (bases 1 to 2571)

1 (bases 1 to 2671)

1 (bases 1 to 2671)

1 (bases 1 to 2671)

1 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases 1 to 2671)

2 (bases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATP5CS; delta1-pyrroline-5-carboxylate
Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  D32138.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   synthase,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thaliana mRNA for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATHATP5CS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Yoshiba, Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCGCTTATGTAGTGGTTTTGATTTAGGGTTAGGATTGCACCAAAAATAAGATCCACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGTAAGCTACCTACACATTTCTGATCTTTATCAAGATACTACTACTTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TIGIAAGCIACCIACACATTICIGAICTITATCAAGATACTACTACTTTTC 2571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCACTTAGTCTTGCTCATAAGTACGATGAAGAACATTTAATTAGCTTCTCTTCTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCACTTAGTCTTGCTCATAAGTACGATGAAGAACATTTAATTAGCTTCTCTTCTTGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 2571)
                                                                                                    TRRAPYODSSGIFWDINSKLAILLALEJKADILLILLSTVEGLYIGFPSDENKLIHTFV
KEKHODEITFGDKSRLGRGGMTAKVKAAVNAAYAGIPVIITSGYSAENIDKVLRGLRV
GTLFHODARLMAPITDSNARDMAVAARESSRKLOALSSEDRKKILLOIADALEANVTT
IKAENELDVASAQEAGLEESMYARLVMTFGKISILAASVEKLADMEEPIGRVLKKTEV
ADGLVLEKTSSPLGVLLIVFESRPDALVQIASLAIRSGNGLLLKGGKEARRSNAILHK
VITDAIPETVGGKLIGFVTSREEIPDLLKLDDVIDLVIBGSSKKLVTQIKNTTKIPVL
GHADGICHVYVDKACDTDMAKRIVSDAKLDVBAACNAMETLLVHKOLEGNAVLNELLF
ALQSNGVTLYGGFRASKILNIFBARSFNHEYCAKACTVEVVEDVYGAIDHIHRHGSAH
TDCIVTEDHEVAELFLRQVDSAAVFHNASTRRSDGFRFGLGAEVGVSTGRIVARGEVG
                                                                            VEGLITTRWIMRGKGQVVDGDNGIVYTHQDIPIQA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="meeldrsrapardvkrivvkvgtavvtgkggrlalgrlgalfeq
Laelnsdgfkvilvssgavglgrqrlryrqlvnssfadlqkpqteldgkacagvgqss
Lmayybtmfdqldvtaaqllvndssfrdkdfrkqlnetvksmldlrvidifnendais
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GI:1532270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1/product="deltal-pyrroline-5-carboxylate synthetase"/protein_id="BAA6864.1"
/db_xref="GI:938021"
2446. .2451
/gene="ATP5CS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="ATP5CS"
/function="proline biosynthesis"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="ATP5CS"
107. .2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 strain="Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             _type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2571 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   op mRNA linear PLN 07-FI
deltal-pyrroline-5-carboxylate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          synthetase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PLN 07-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2520
```

2041 CGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGG 2100	γον	DD 901 GAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAAACCTTGTTTCATCAAGATGCTCG 900
1981 AGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAAGTGGATAG 2040	D	01 GAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCG 9
AGTTGTAGAAGACGTTTATGGTGCTATAGATCACCATTCACCGACATGGGAGTGCACACAC	? B !	QY 841 TGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTGA 900
1861 GAACATACCAGAAGCACGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGA 1920 1921 AGTTGTAGAAGACGTTTATGGTGCTATAGATCACACTTCACCGACATGGGAGTGCACACAC 1980	δ β	QY 781 GATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACTGCAAAAGTCAAAGC 840
	Q B	OY 721 TCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGA 780
	Q B :	Qy 661 GGAACTGAAAGCTGATCTTCTGATTCTTGAGCGATGTTGAAGGTCTTTACACAGGCCC 720
1681 GGATATGGGAAAGCGCATAGTTIC GAATGCAAAGGTATCAGACCTACCAGCCTGTAATGC 1740 1681 GGATATGGCAAAGGGCATAGTTTCTGATGCAAAGGTTGGACTATCCAGCAGCAGCCTGTAATGC 1740 1741 GATGGAAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTAT 1800	Q B Q	QY 601 ATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAACTTAGCTGCTCTACTGGCGTT 660
CCCTGTGCTAGGTCATGCTGATGGAATCTGTCAGTATATGTCGACAAGGCTTGTGATAC	p &	OY 541 TGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCC 600
CONTROL CONTROL CO) B 4	OY 481 CAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCT 540
SUL IGENCLIGICACIA CARGADARAMANASIICCIGALIGULIA (SELIGACIA GALGACIA) SELIGACIA (SELIGACIA) SELIGACIA (SELIGACIA) SELIGACIA CARGADARAGA CONTROLOGO (SELIGACIA CARGADARA	S B 8	OY 421 TTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGA 480
##1 IGC.AICINACACANGSIGAT CACIGATIGCANTICCAGAGACTGIIGGGGGTAAACTCAT ##1 IGC.AICINACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGTAAACTCAT ##1 IGC.AICINACACAAGGTGATCACTGATGCAAATTCCCAGAGACTGTTGGGGGTAAACTCAT ##1 IGC.ACTTTACACAAGGTGATCACAATTCCTGATTTCCAGAGAACTGTTGGGGGTAAACTCAT) B 6	OY 361 GCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGC 420
361 TECCHICCE HELICONAMICS I ILICIOCIONANGO GO GO GO GO GO GO GO GO GO GO GO GO G) B &	OY 301 TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAA 360 Db 301 TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAA 360
321 MGGCGTACTICTGATIGITITIGAATCCCGCCGTGGATGGAAAGGCGCCGGCGATGAAA 321 AGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACT 321 AGGCGTACTTCTGATTGTTTTTTGAATCCCGACCTGATGCACATGAACAGATAGCTTCACT	S B &	QY 241 TGCGGAATTAAACTCGGATGGATTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCT 300
1 TOTTTTAAAGAAAACAGAGGTGGCCAGATGGTCTTGTCTT	S & &	QY 181 TGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCT 240
GATUTORSCUT SCASULTINGTICS TO STANCE) b 6	QY 121 TCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGT 180
	9 g	QY 61 TCGTTCCTCTCTGTGTGTGGTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGA 120
1081 CGATGCCCTTGAAGCAAATGTTACTACAATCAAACCAGATGAGATTAGATTAGACTTC 1140 1081 CGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGTAGCTTC 1140 1081 CGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGTAGCTTC 1140	S B 8	1 CTGATATTTATTTTCTTACCTTAAATACGACGGTGCTT
TTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAATTCTGCTTGATATTGC TTCCAGAAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATTCTGCTTGATATTGC	dd dy	Query Match 99.6%; Score 2561.4; DB 8; Length 2571; Best Local Similarity 99.8%; Pred. No. 0; Matches 2565; Conservative 0; Mismatches 6; Indels 0; Gaps 0;
TTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAG	99 Vy	/note="putative" polyA_site 2571 /gene="ATP5CS" ORIGIN

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 4
ATP5COSMR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                       MEDLINE
PUBMED
                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2101 TGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGGGTCGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       X87330.1 GI:1019749
pyrroline-5-carboxlyate synthetase.
Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
1 (bases 1 to 2584)
Sevence A Janua S Hua Y T Ardines W Van Montagn; M and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2584 bp mRNA linear PLNA. A.thaliana mRNA for pyrroline-5-carboxylate synthetase. X87330
                                                                                                                                                                                            Submitted (19-MAY-1995) A. Savoure, University of Gent, Laboratorium Genetika, B-9000 Gent, Belgium On Oct 14, 1995 this sequence version replaced gi:829099. This sequence has been checked for contamination by vector
                                                                                                                                                                                                                                                                                                                                                                                               encoding the delta 1-pyrroline-5-carboxylate synthetase Arabidopsis thaliana FEBS Lett. 372 (1), 13-19 (1995)
                                                                                                                                                                           sequences
                                                                                                                                                                                                                                                                                                          Savoure, A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Isolation,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Verbruggen, N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Savoure, A., Jaoua, S., Hua, X.J., Ardiles, W., Van Montagu, M. and
                                                                                                                                                                                                                                                                                                                                                       556633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TIGTAAGCTACCACATTTCTGATCTTTATCAAGATACTACTACTTTTC 2571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCACTTAGTCTTGCTCATAAGTACGATGAAGAACATTTAATTAGCTTCTCTTCTTGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCACTTAGTCTTGCTCATAAGTACGATGAAGAACATTTAATTAGCTTCTTCTTGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTGTGTATTTGGTTGAGACTTTGAGGAGAGAGAACACAGAGGAGGATGGGCTTTTTTGTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTCGACGGAGACAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TIGIAAGCIACCIACACATITCIGATCITIATCAAGATACIACITATITC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCGCTTATGTAGTGGTTTTGATTTAGGGTTAGGATTGCACCAAAAATAAGATCCACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCGCTTATGTAGTGGTTTTGATTTAGGGTTAGGATTGCACCAAAAATAAGATCCACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTCTGCTTAGTACTCATATCCTATCATTATTATTACTACTACTATTATTGAAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTTGTGTATTTGGTTGAGACTTGAGGAGAGAGACACAGAGGAGGATGGGCTTTTTTGTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAAACAAGACTTCCGAGTGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAAACAAGACTTCCGAGTGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTCGACGGAGACAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCAGAGGTGGGGGTAAGCACGGGCAGGATCTATGCTCGTGGTCCAGTCGGGGTCGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 2584)
                                                                                                                                                                                                                                                                                       Submission
                                                                 /varīety="Columbia"
                                                                               /organism="Arabidopsis thaliana"
/mol_type="mRNA"
                                                                                                                                                      Location/Qualifiers
/db_xref="taxon:3702"
/chromosome="2"
                                       isolate="A45"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 characterization, and chromosomal location of a gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PLN 19-OCT-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2160
S
                                          밁
                                                                                  S
                                                                                                                              밁
                                                                                                                                                                         Ś
                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 2561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2561;
                                                                                                                                   481
                                                                                                                                                                              489
                                                                                                                                                                                                                        421
                                                                                                                                                                                                                                                                  429
                                                                                                                                                                                                                                                                                                             361
                                                                                                                                                                                                                                                                                                                                                       369
                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                              309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 129
  609 ATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTTTGGAACTGA 668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    μ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCTCTGTGTGTGTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGATCGTTCAC 128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TATTTTCTTACCTTAAATACGACGGTGCTTCACTGAGTCCGACTCAGTTAACTCGTTCCT 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAAAAGTTGGAAGATTTGGCTCTTTGGTCGTTTAGGAGCACTGTGTGAACAGCTTTGCGGAAAT 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGTTGTTACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGTTGTTACTG 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCTCTGTGTGTGTGTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGATCGTTCAC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATTTTCTTACCTTAAATACGACGGTGCTTCACTGAGTCCGACTCAGTTAACTCGTTCCT 60
                                                                               GGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCCGAAGAGCCCCCATATCAGG
                                                                                                                                 TTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCTTGATTTGA
                                                                                                                                                             TTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCTTGATTTGA 548
                                                                                                                                                                                                                     AGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGACAGTAGTT
                                                                                                                                                                                                                                                                  AGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGACAGTAGTT
                                                                                                                                                                                                                                                                                                             CTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGCTTACTATG
                                                                                                                                                                                                                                                                                                                                                       CTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGCTTACTATG
                                                                                                                                                                                                                                                                                                                                                                                                    AAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAAGCCTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAAGCCTCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCTTGGCAGGC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCTTGGCAGGC 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCTTGCGGAAT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="MEELDRSRAFARDVKRIVVKVGTAVVTGKGGRLALGRLGALCEQ
LABINSDGFEVILVSGGAVGLGRQRLEYRQLVNSSFADLQKPQTELDGKACAGVGQSS
LMAYYETMFDQLDVTAAQLLVNDSSFADLQKDFKQLMETVKSMLDLVIPIFNENDAIS
TRRAPYQDSSGIFWDNDSLAALLALELKADLLILLSDVEGLYTGPPSDPNSKLIHTEV
KEKHQDEITFGDKSRLGRGGMTAKVKAAVNAAYAGIPVITSGYSAENIDKVLRGLRV
GTLFHQDARLMAPITDSNAWARLMATFGKISLALASEDRKKILLDIADALEANVTT
IKARNELDVASAQEAGLESSNAVARLVATFGKISSLAASVRKLDADEDFIGRVLKKTEV
ADGLVLEKTSSPLGVLLIVESRRDALVQIASLAIRSGNGLLLKGGKEARRSNAILHK
VITDAIPETVGGKLIGLVTSREEIPDLLKLDDVIDLVIPRGSNKLVTQIKNTTKLFVL
GHADGICHVYVDKACDTDMAKRIVSDAKLDYPAACNAMETLLVHKDLEQNAVLNELIF
ALQSNGVTLYGGPRASKILNISEARSTHEYCAKACTVEVVEDVYGAIDHIHRHGSAH
TDCIVTEDHEVAELFLRQVDSAAVFHNASTRFSDGFRFGLGAEVGVSTGRIHARGPVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="pyrroline-5-carboxylate synthetase"
/protein_id="CAA60740.1"
/db_xref="GI:829100"
/db_xref="GOA:P54887"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="root"
/clone_lib="ASA45"
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VEGLLTTRWIMRGKGQVVDGDNGIVYTHQDIPIQA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 dehydrogenase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                map="73.5 cM"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      function="gamma-glutamyl kinase and glutamic semialdehyde
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _xref="SWISS-PROT:P54887"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 2559.8;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ν
••
```

Indels Length 2584;

0;

Gaps

0

540

480 488 420 428 360

608

600

성 유

1509 TGACTTCAAGAGAAGAGTTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGA 1568 1501 TGACTTCAAGAGAAGAGTTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGA 1560 1569 TCCCAAGAGAAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGA 1560 1561 TCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAATACTACAAAAATCCCTGTGC 1628 1561 TCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAATACTACAAAAATCCCTGTGC 1620 1629 TAGGTCATGCTGATGGAAATCTGTATATATGTCGACAAGGCTTGTGAAAAATACTACGATAATGG 1621 TAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATACGGATATGG 1621 TAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATACGGATATGG 1621 TAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATACGGATATGG 1620 CAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGGCTTGTAATGCGATAGGAAA 1748 1630 CAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGGCTTGTAATGCGATAGGAAA 1748	### ARCTORICTICISTATUTICISCANACISTICACISTICACISTICACICCICCICCACAGI (228 ARCCORICTICACICCACAGITICITICITACICCACAGITICITICACACAGICCITICACACAGICCITICACACAGITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACAGICCITICACACACACACACACACACACACACACACACACA
<u> </u>	· · · · · · · · · · · · · · · · · · ·
RESULT 5 ATPSCSAGN LOCUS DEFINITION ACCESSION VERSION VERSION KEYMORE SOURCE ORGANISM REFERENCE AUTHORS	B
ATPSCSAGN ATPSCSAGN ATPSCSAGN A. thaliana mRNA for pyrroline-5-carboxylate synthetase A. X86777 X86777 X86777. X86777. Arabidopsis thaliana (thale cress) Arabidopsis thaliana Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis. Strizhov, N., Abraham, E., Okresz, L., Blickling, S., Zilberstein, A., Strizhov, N., Abraham, E., Okresz, L., Blickling, S., Zilberstein, A.,	1948 CCCTTCTTGTGCATAAGGATCTAGGACAGCTGTACCAGCAGCCTGTAATGGATAA 1740 1941 CCCTTCTTGTGCATAAGGATCTAGAGCAGATGCTGTGCTTAATGAGCTTATTTTGCTC 1808 1941 CCCTTCTTGTGCATAAGGATCTAGAGCAGATGCTGTGCTTAATGAGCTTATTTTTGCTC 1800 1957 TGCAGAGCAATGGATCACTTTGTATGGTGGACCAAGGGCAAGTAAGACTTATTTTTCTC 1800 1959 TGCAGAGCAATGGATCACTTTGTATGGTGGACCAAGGGCAAGTAAGACTTATTGAACCATAC 1860 1950 TGCAGAGCAGTGATTCAACCATGAGTACTGTGGACCAAGGGCAAGTAAGATTCTAACATTCTAACTTCTAC 1950 TGCAGAGCAGTGATTCAACCATGAGTACTGTGCCAAGGGTTGGACCAGGACTTGAACTTCTAACTTCTAACTTCTAC 1950 TTGTGACAGAAGATCACATGAGTACTACCGACATGGACCAAGGAGCTAGCACTGCACTGCACAGAGTTGAACTTCTAA 1951 TATGGACAAGAATCACAAAGTTCCAAGTTCCAAGATTGCACCAAGAGTTGAACATTCTAA 1952 AAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGAAGTTGCACACACA

유 성

음 성

8 8 8

유 상 유

5

유 성

8 8 8 8

Ş

유 8

B & B &

8 8 8 8

음 성

유 성 유

```
REFERENCE
AUTHORS
TITLE
                                                                                                         Ş
                                                                                                                                                                                            S
                                                                                                                                                                                                                                               В
    Ş
                                                               밁
                                                                                                                                                       ß
                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Local
                 335
                                                               241
                                                                                                             275
                                                                                                                                                         181
                                                                                                                                                                                                     215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2537;
                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                             155
                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             35
                                                                                                                                                                                                                                                                                                                                                                                   95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Schell,J., Koncz,C. and Szabados,L. Differential expression of two P5CS genes controlling proline accumulation during salt-stress requires ABA and is regulated by ABA1, ABI1 and AXR2 in Arabidopsis PABA1, J. 12 (3), 557-569 (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                    \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Submitted (06-JUN-1995) N. Strizhov, Max-Planck-Inst. fuer
Zuechtungsforsch., Carl-von-Linne-Weg 10, 50829 Koeln, FRG
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
AATAGCAGCTTTGCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCT
                                                                                                 TTGGTGTCATCTGGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTC
                                                                                                                                                         ACGACGACGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGT 120
                                                                                                                                                                                                                                                                                                                                                                                     ACGACGACGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGT
                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGGTGTCATCTGGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTC
                                                                                                                                                                                                                                                                                        ATCGTCGTTAAGGTTGGGACAGCAGTTGTTACTGGAAAAAGGTGGAAGATTGGCTCTTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (bases 1 to 2552)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /traislation="Mebildrah function in volvetalvetgrealized (traislation="Mebildrah function in the function of the function in the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of the function of t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="p5c8A"
/codon_start=1
/product="pyrroline-5-carboxylate synthetase
/protein_id="CAA60446.1"
/db_xref="G1:870866"
/db_xref="GQA:P54887"
/db_xref="SWISS-PROT:P54887"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="p5csA"
73. .2226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               dev_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             clone="c8-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     one_lib="lambda-gt10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _species="ecotype Columbia"
_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               stage="4 weeks seedlings"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 2537; ; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 2552;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                   394
                                                               300
                                                                                                                                                         240
                                                                                                                                                                                                     274
                                                                                                                                                                                                                                                                                             214
                                                                                                                                                                                                                                                                                                                                                                                        154
                                                                                                                                                                                                                                                                                                                                                                                                                                    60
                                                                                                             334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                     밁
                                                                                                                            Ś
                                                                                                                                                                               닭
                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        닭
맑
                                    Ş
1381
                                                                                     1321
                                                                                                                                                                                  1261
                                                                                                                                                                                                                              1295
                                                                                                                                                                                                                                                                       1201
                                                                                                                                                                                                                                                                                                                                                                  1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGTGTTGGACAAAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGTTGAAGGTCTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATAGCTTAGCTGCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGCTATTAGCACCCGAAGAGCCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTAATGAAACTGTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACGGCAGCTCAACTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACGGCAGCTCAACTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTGTTGGACAAAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTG
                                                                                                                       GATGCACTTGTACAGATAGCTTCACTTGCCCATCCGTAGTGGAAATGGTCTTCTGCTGAAG
                                                                                                                                                                                                                                                                                                                 GCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTT
                                                                                                                                                                                                                                                                                                                                                                  GCTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTA
                                                                                                                                                                                                                                                                                                                                                                                               GCTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAA 1114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGAACCTTGTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAACCTTGTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCATAACCAGTGGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCATAACCAGTGGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGGGTATGACTGCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGGGTATGACTGCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTC 874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATGTTGAAGGTCTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATAGCTTAGCTGCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGCTATTAGCACCCGAAGAGCCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTAATGAAACTGTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAAT
GGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATT
                                       GGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATT 1474
                                                                                          GATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAG
                                                                                                                                                                               GTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCT
                                                                                                                                                                                                                           GTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCT
                                                                                                                                                                                                                                                                          GCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTGTTAAAGAAAAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                          1380
                                                                                                                                      1414
                                                                                                                                                                                                                              1354
                                                                                                                                                                                                                                                                                                                        1294
                                                                                                                                                                                                                                                                                                                                                                    1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                634
  1440
                                                                                                                                                                                    1320
                                                                                                                                                                                                                                                                                                                                                                                                                  1234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  720
                                                                                                                                                                                                                                                                               1260
```

밁

301

AATAGCAGCTTTGCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCT

Ś 밁 Ś 밁 Ś 밁

Ś 밁

밁

8

GATACTACTTTTC 2571 Query M	CATTTAATTAGCTTCTCTTGTCATTGTAAGCTACCTACACATTTCTGATCTTTATCA 2554	2494 2460	TATTACTACTACTTATTGAAACCCTCGCTTATGTAGTGGTTTTGATTTAGGGTTAGG 2434	AGAGGAGGATGGGCTTTTTTGTTTCCTCTCCTGCTTAGTACTCATATCCTATCATTATTAT 2374	GCTTAAACAAGACTTCCGAGTGTGTGTTTTGGTATTTGGTTGAGACTTGAGGAGAGACAC 2314	GGACAAGTTGTCGACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAA 2254	GCTCGTGGTCCAGTCGAGGATTACTTACAACGAGATGGATAATGAGAGGAAAA 2194	TCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCAT 2134	GAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTGTTCCACAAGCCCAGACACAAGATTC 2074	A 2014 	TACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCAC 1954	GGTGGACCAAGGGCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAG 1894	CAGAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTAT 1834	TTGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAG 1//4	1714 1680		TGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTT 1594 RESULT 6
Match 85.0%; Score 2185; DB 8; Length 2185;	R 21552185 /gene="At2g39800"	GHADGIO ALQSNGV TDCIVTE VEGLLTT	GTLFHQDARLMAPITDSNARDMAVAARESSRKLQALSSEDRKKILLDIADALEANVT IKAENELDVASAQEAGLEESMVARLVMTPGKISSLAASVRKLADMEDPIGRVLKKTE ADGLVLEKTISSPIGVALILVERERREDALVQIASLAIRGSROKLLLKGGKEARRSNALLH VITDAIDETVGGKLIGLVTSREBIPDLLKLDDVIDLVIPRGSNKLVTQIKNTTKIPV	LAELNSDGFEVILVSSGAVGLGRQRLRYRQLVNSSFADLQKPQTELDGKACAGVGQSS LMAYYETMFDQLDVTAAQLLVNDSSFRDKDFKQLNETVKSMLDLRVI PIFRNDAIS TRRAPYGDSSGIFMDNDSLAALLALELKADLLILLSDVEGELYTGPFSDDNSKLTHTFV KEKHQDEITFGDKSRLGRGMTAKVKAAVNAAYAGIPVIITSGYSAENIDKVLRGLRV	(P5C1)" /protein_id="AAN12972.1" /protein_id="AAN12972.1" /db_xvef="GI:23297451" /translation="MEELDRSRAFARDVKRIVVKVGTAVVTGKGGRLALGRLGALCE	<pre>/gene="At2g39800" /codon start=1 /evidence=experimental /product="delta-1-pyrroline 5-carboxylase synthetase</pre>	/note="This clone is in puni 51." 12185 /gene="At2g39800" 12154	702 i	0	Street, Albany, CA 94710, USA Annotation is based on the January 2002 version of the Arabidopsis genome submitted to GenBank.	u,G., Yuan,S., Chen,H., Cheuk,R., Jones,T., Palm,C.J., Shinn,P., Southwick,A., Tripp,M., Ecker,J.R. and Theologis,A. mission	Unpublish 2 (bases Yamada, K. Quach, H.I			Arabidop Arabidop Eukaryot Spermato	(PSC1) (At2g39800) mRNA, complete cds. AY150430 AY150430.1 GI:23297450 FLI_CDNA.	AY150430 2185 bp mRNA linear PLN 23-SEP-2002 Arabidopeis thaliana delta-1-pyrroline 5-carboxylase synthetase

Ś 밁 Ş 밁 Ś 밁 Ś 片

Ś

Ъ 8 В Ś 문 á

밁 Ś 片 Ş 뮍 Ś 皮 Ś 밁 8 밁

Ş	Db dd	युव १५०	d dy	g dy	Q Qy	Qy Db	g dy	Qy db	d dd	Qy db	Qy db	ου Oy	р У	Q Qy	B 8	Db Qy	g 8	Best Lo Matches
1127 TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT 1186	1067 CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG 1126	1007 GCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATT 1066 	947 CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT 1006	887 GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT 946	827 GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT 886	767 ABACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACT 826	707 CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA 766	647 GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGT 706	587 ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT 646	527 GTCAAGTCTAIGCTTGATTTGAGGGTTAITCCAATTTTCAATGAGAATGATGCTATTAGC 586	467 CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT 526	407 AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTAGACGCCAGCTCAA 466	347 GCGGATCTTCAGAAGCCTCAGACTTGAACTTGATGGGAAGGCTTGTGCTGTGTTTGGACAA 406	287 GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT 346	227 CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT 286	167 GTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA 226	107 ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG 166	ocal Similarity 100.0%; Pred. No. 0; 1ndels 0; Gaps 2185; Conservative 0; Mismatches 0; Indels 0; Gaps
-																		
D 6	S & 4	S B 7	S B 8	, B &	D 5	5 B 8	D 49	. D &	₹ B 4	S B &	S B 8	D 42	5 B 5	? B &	S B 2	S B 1	δ <u>β</u>	52 B
2101 GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAAACAAGA 2160	11 CONTROL OF THE CANADA CAN	981 CGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGAGGAGGAAGGA	202/ GCCMAGIGHAIAGGGIGGIGGGGGGGGAGGAGGAGGATGGATGGTGGTGGTGGTCCA 2146	96/ GEGAGIGCACACACAGCIGCAITGIGKAGAGGAICACGAAGGIIGCAGAGCIATICCII 2 861 GEGAGIGCACACACACACACAGACIGCATTGIGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT 1 861 GEGAGIGCACACACACACAGACTGCATTGIGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT 1	GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATCCGACAT				AAGGCTTGTGAATGCGAATGCGAAAGCCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG			GOGGGTAAACTCATTGGACTTGTGACTTCAAGAGAAGAGA	GCCCGGCGAICAMAIGCIAICIACACMOSSIGAICACCACTGATCCCAGAGACTCTTAAGCCTTTAAGCTTTTAAGCTTTTAAGCACTGATCCAGATCTTTAAGCTTTTAAGCACAGACTGATCCAGATCTTTAAGCTTTTTAAGCACAGACTGATCCAGATCTTTTAAGCTTTTTAAGCACAGATCTGATCTTTTAAGCACTGATCTTTTTTTT	261 CAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG	ACCITCALIACCATIAGGGITACTICITATICITATICITATICATACATICACITATICATACATICACITATICACATICACCACTICACCACTICACCACTICACCACTICACCACTICACCACTICACCACTICACCACTICACCACTICACCACTICACCACTICACCACTICACCACACACA	141 GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAAAG	1081 ATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAGCT	1021 TTAGATGTAGCTTCTGCAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTGGC

Qy 467 CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT 526	Oy 347 GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA 406	7 7	Qy 107 ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG 166	ORIGIN Query Match 83.8%; Score 2154; DB 6; Length 2154; Best Local Similarity 100.0%; Pred. No. 0; Matches 2154; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	ES	REFERENCE 1 AUTHORS Harper, J.F., Kreps, J., Wang, X. and Zhu, T. TITLE Stress-regulated genes of plants, transgenic plants containing same, and methods of use JOURNAL Patent: WO 0216655-A 1391 28-FEB-2002;	1 G is t is t byta	RESULT 7 AX506696 AX506696 LOCTUS AX506696 DEFINITION SEQUENCE 1391 from Patent WC0216655.	QY 2267 CTTCCGAGTGTGTGTTTGTGTATTT 2291
1441 GATGACGTTATCGATCTTGTGATCCCAAGAGCAACCATGGATCTAGATGTCAGATAAAA 1607 AATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGTGATGTCAGATCTGAGATCTGTCAGATAAAA 1607 AATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC	Db 1321 GCCCGGCGATCAAATGCTTTTCTAACAAGGTGATCACTGATGCAATTCCAGAGACTGTT 1380 1321 GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT 1380 1487 GGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAAGAATTCCTGATTTGCTTAAGCTT 1546 [1307 ACCTCATCACCATTAGGCGTACTTCTGATTCTTTTTGAATCCCGACCTGATGCACTTCTA	OY 118/ AIGHANCE CHARACH CLICAGO CONTROL INCOLUTION INC		Qy 1007 GCTGCGAGGGAAAATTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATT 1066	947 CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT	Qy 827 GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGAGTTCCTGTCATCATAACCAGT 886		Db 541 GCTCTACCTGGCGTTGGAACTGAAAGCTGATCTTCTGATGTTGAAGGT 600 Qy 707 CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA 766

δ

Ś

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 8
AY113046
      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Shoor
                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1861
                                                                                                                                                                                                  Z (bases 1 to 2154)
Kim,C.J., Chen,H., Cheuk,R., Shinn,P., Banh,J., Bowser,L.,
Kim,C.J., Chen,H., Cheuk,R., Goldsmith,A.D., Hayashizaki,Y.,
Carninci,P., Chang,E., Dale,J.M., Goldsmith,A.D., Hayashizaki,Y.,
Ishida,J., Jones,T., Kamiya,A., Karlin-Neumann,G., Kawai,J.,
Ishida,J., Jones,T., Kamiya,A., Karlin-Neumann,G., Kawai,J.,
Itam,B., Lee,J.M., Lin,J., Wiranda,M., Narusaka,M., Nguyen,M.,
Onodera,C.S., Palm,C.J., Quach,H.L., Sakurai,T., Satou,M., Seki,M.,
Southwick,A., Tang,C.C., Toriumi,M., Wu,H.C., Yamada,K.,
Yamamura,Y., Yu,G., Yu,S., Shinozaki,K., Davis,R.W., Theologis,A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   i (bases 1 to 2154)

Kim,C.J., Chen,H., Cheuk,R., Shinn,P., Banh,J., Bowser,L.,

Kim,C.J., Chen,H., Cheuk,R., Shinn,P., Banh,J., Bowser,L.,

Carninci,P., Chang,E., Dale,J.M., Goldsmith,A.D., Hayashizaki,Y.,

Ishida,J., Jones,T., Kamiya,A., Karlin-Neumann,G., Kawai,J.,

Ishida,J., Jones,T., Kamiya,A., Karlin-Neumann,G., Kawai,J.,

Lam,B., Lee,J.M., Lin,J., Miranda,M., Narusakak,M., Nguyen,M.,

Onodera,C.S., Palm,C.J., Quach,H.L., Sakurai,T., Satou,M., Seki,M.,

Southwick,A., Tang,C.C., Toriumi,M., Wu,H.C., Yamada,K.,

Yamamura,Y., Yu,G., Yu,S., Shinozaki,K., Davis,R.W., Theologis,A.
RIKEN Genomic Sciences Center (GSC) members carried out the
                                                      Submitted (14-MAY-2002) Salk Institute Genomic Analysis Laboratory (SIGNAL), Plant Biology Laboratory, The Salk Institute for Biological Studies, 10010 N. Torrey Pines Road, La Jolla, CA 92037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AY113046
Arabidopsis thaliana At2g39800/T517.10
                                                                                                                                                     Direct Submission
                                                                                                                                                                                  and Ecker, J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis ORF clones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AY113046.1 GI:21360476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGCCAAGTGGATAGCGCTGTGTTCCCACAACGCCAGCACAAGATTCTCAGATGGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGCCAAGTGGATAGCGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TIRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA, complete
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PLN 09-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1860
                                                                                                                                                                                                           망
                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                         В
                                                                                                                                               S
                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
```

S 8 S 맑

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kim,C.J. (SSP/Salk) and Seki,M. (RIKEN GSC) contributed equally to
this work. Shinozaki,K. (RIKEN GSC) and Ecker,J.R. (SSP/Salk)
contributed equally to this work as PIs.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The Salk, Stanford, PGEC (SSP) Consortium members constructed and sequenced the pUNI (ORF) clones using the RAFL CDNAB: Kim,C.J., Chen,H., Cheuk,R., Shim,P., Banh,J., Bowser,L., Chang,E., Dale,J.M., Goldsmith,A.D., Jones,T., Karlin-Neumann,G., Lam,B., Lee,J.M., Lin,J., Miranda,M., Nguyen,M., Ondera,C.S., Palm,C.J., Quach,H.L., Southwick,A., Tang,C.C., Toriumi,M., Wu,H.C., Yamadda,K., Yamamura, Y., Yu,G., Yu,S., Davis,R.W., Theologis,A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            collection and clustering of RAFL cDNAs (RAFL cDNA: 'RIKEN Arabidopsis Full-Length cDNA'): Seki,M., Narusaka,M., Ishida,J., Satou,M., Kamiya,A., Sakurai,T., Carninci,P., Kawai,J., Hayashizaki,Y. and Shinozaki,K.
                           IMAYYETMEDQLDVTAAQLLVNDSSPRDKDPRKQLNETVÄSMLDLRVIFIFNENDÄIS
TRRAPYQDSSGIFMDNUSLAALLALEKADLLILLSUVEGLYTGPSUDNSKLIHTFV
KEKHQDEITFCDKSRLGRGMTAKVKAAVNAYAGIFVI ITSGYSAENIDKYLRGLRY
GTLFHQDARLMAFITDSNARDMAVAARESSRKLQALSSEDRKKILLDIADALEANVTT
IKAENELDVASAQEAGLEESMYALIVATTPGKISSLAASVRKLADMEDDIGRVLKKTEV
ADGLVLEKTSSEIGVLILVFESREDALVQIASLAIRSGBULLKGGKEARRSNAILKY
VITDAIPETVGGKLIGLVTSREEIFDLLKLDDVIDLVIPRGSNKLVTQIKNTTKIPVL
GHADGIGHVYUDKACDTDMAKRIVSDAKLDYPAACKACTVEVVEDVYGAIDHIHHGSAI
ALQSNGVTLVGGPRASKILNIFEARSFNHEYCAKACTVEVVEDVYGAIDHIHHGSAIF
TDCIVTEDHEVAELFLRQVDSAAVFHNASTRESDGERFGLGAEVGVSTGRIHARGPVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /trānslation="meeldrsrafardvkrīvvkvgTavvTgkggrlalgrlgalceq
LaelnsdgfevIlvssgavglgrqrlkyrqlvnssfadlqkpqTeldgkacagvgqss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="At2g39800/T517.10"
/protein_id="AAM47354.1"
/db_xref="GI:21360477"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Arabidopsis thaliana"
/mol_type="mbNA"
/db_xref="taxon:3702"
/chromosome="2"
VEGILTTRWIMRGKGQVVDGDNGIVYTHQDIPIQA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          note="delta-1-pyrroline 5-carboxylase synthetase (P5C1)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note="This clone is in pUNI 51"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="U14433"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ecotype="Columbia"
```

```
Matches 2154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                              347
                                                                                                                                                           181
                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                          227
                                                                                                                                                                                                                                                                                                                                                                                 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         107
                                                                                                                                                                                                                                                                                                                                         13
                         AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA
                                                                                                  GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGGAGGAGCTAGATCGTTCACGTGCTTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG 166
                                                                                                                                                         GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT 240
                                                                                                                                                                                                                                                CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT
                                                                                                                                                                                                                                                                                      CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT 286
                                                                                                                                                                                                                                                                                                                                                                                 GTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA 226
                                                                                                                                                                                                                                                                                                                                                                                                                              ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG
                                                                    GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA
                                                                                                                                                                                                 GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT 346
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    83.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   о
;:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 2154;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 2154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                         466
                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                              60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

B	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
1187 ATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTAGCTAAGCTAGCT	467 CTTCTGGTGAATGACGTTACTATGAGACCAAGGTTGAGAAGCAAGC
RESULT 9 AF3.14811 LOCUS DEFINITION ACCESSION VERSION KEYWORDS SOURCE ORGANISM REFERENCE AUTHORS TITLE JOURNAL REFERENCE AUTHORS TITLE JOURNAL REFERENCE AUTHORS TITLE JOURNAL REFERENCE AUTHORS TITLE JOURNAL REFERENCE AUTHORS TITLE JOURNAL	Qy 1547 Db 1441 Qy 1607 Db 1501 Qy 1667 Db 1561 Qy 1727 Db 1621 Qy 1787 Db 1681 Qy 1787 Db 1741 Qy 1967 Db 1967 Qy 1967 Db 1967 Db 1967 Db 1967 Db 1967 Db 1967 Db 2041 Db 2041
AF314811 AF314811 Brassica napus delta 1-pyrroline-5-carboxylate synthetase A mRNA, complete cds. AF314811. GI:12667248 Brassica napus (rape) Brassica napus (rape) Brassica napus (viridiplantae; Streptophyta; Embryophyta; Tracheophyta gukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta Spermatophyta; Hagnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Brassica. 1 (bases 1 to 2551) Kang,Y.H. and Lee,S.Y. 1 solation of a gene encoding the delta 1-pyrroline-5-carboxylate synthetase A in Brassica napus Unpublished 2 (bases 1 to 2551) Kang,Y.H. and Lee,S.Y. Direct Submission Submitted (19-0CT-2000) Lab. of Biochemistry, Graduate School of Biotechnology, 1, 5-ka, Anam-dong, Sungbuk-ku, Seoul 136-701,	1547 GATGAGGTTATCGATCTTGTGATCCCAAGAGGAACGAACAACCTTGTTACTCAGATAAAA 1608 1441 GATGACGTTATCGATCTTGTGATCCCAAGAGGAACGAACAACCTTGTTACTCAGATAAAA 1508 1607 AATACTACAAAAATCCCTGTGCTAGGTCATGGTCATGTGTGATCTGTTACTTCAGATAAAA 1508 1607 AATACTACAAAAATCCCTGTGCTAGGTCATGGTCATGTGTGTATATGTCGAC 1568 1501 AATACTACAAAAATCCCTTGTGTGTATGGCCAAGGCGATTGTTTTTTGTTCAACTTTATTTTCCAC 1568 1501 AATACTACAAAAATCCCTTGTGTGCAAAGCGCATTAGTTTCTGTATATGTTCGAC 1568 1501 AATACTACAAAAATCCCTTTGTGCAAAGCGCATTAGTTTCTGTATATGTTCGACTTATCCA 1568 1501 AATACTACAAAAAATCCCATTGTGAAAACCCTTTCTTGTGCATAAGGATCTAAAGGACGAATGTTGGACCTATCCA 1568 1501 AATACTACAAAAAATCCCAAAACCCTTTCTTGTGCATAAGGATCTAAAGGACGAATGTGGACCTATCCA 1568 1501 AATACTACAAAAAATATGCGATGAAAACCCTTCTTTGTGCATAAGGATCTAAGGACAATGTGGACCAAAGCTTGTGT 1721 CAAGCCTTGAATGCGATGGAAAACCCTTCTTTGTGCATAAGGATCTAAGGACAAAGGCAGAATGCTGTGT 1721 CAAGCCTTTATTTTTTGCTCTTTTGTCTCTTTTTTTTTT

```
ATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG 1786
                                  GGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2260
                                                                                                                                                                                         GATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTC 2206
                                                                                                                                                                                                                                                                                                                          GIGCAGAGGIGGGGIAAGCACGGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                            AGCGCTGCTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC 2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT 2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          заасттотасаасасттатостостатасатсасаттсасссасат 1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       тдаасатассадаадсасдстсаттсаассатдадтастдтдссаад 1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cegararegeaaagececaraerricigarecaaaerregaerareca 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA 1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rcccrerecraeercarecrearecaarcrercarerarararerceac 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC 1666
GAATTGTTTACACCCATCAGGACATTCCCCATCCAAGCTTAA 2154
                                                                                                                             GATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTC
                                                                                                                                                                                                                                                       KGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA 2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG 1800
                                                                                                                                 2100
```

PLN 06-FEB-2001

```
Ś
                                                                                                                                           밁
                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                        δ
                                                              밁
                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 72.5%;
Best Local Similarity 86.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 2137;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sg
                        678
                                                                                                     618
                                                                                                                                             545
                                                                                                                                                                                                                        485
                                                                                                                                                                                                                                                               498
                                                                                                                                                                                                                                                                                                     425
                                                                                                                                                                                                                                                                                                                                          438
                                                                                                                                                                                                                                                                                                                                                                                  365
                                                                                                                                                                                                                                                                                                                                                                                                                     378
                                                                                                                                                                                                                                                                                                                                                                                                                                                             305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rep.of Korea
TTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTACACAGGCCCTCCAAGTGATCCTAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGGATTTGAGGTGATCTTGGTGTCATCAGGTGCGGTTGGCCTTGGCCGCCAAAGGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGATTGGCTCTTGGTCGCCTAGGAGCTCTGTGTGAACAGCTTGCGGAATTAAACTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGTTGTTACTGGAAAAGGTG 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGTGGTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTTG
                                                                GCATCTTTTGGGATAACGACAGCTTAGCTGCTCTATTGGCGCTGGAGCTGAAAGCTGATC
                                                                                                   GTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTTGGAACTGAAAGCTGATC
                                                                                                                                                                                  CAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCCCATATCAGGATTCTTCTG
                                                                                                                                                                                                                        AGGAGTTCAGGAAGCAACTTAATGAGACAGTGAAGTCCATGCTTGATTTGAGGGGTTATTC
                                                                                                                                                                                                                                                           AGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCTTGATTTGAGGGTTATTC
                                                                                                                                                                                                                                                                                                   TTGACCAGCTGGATGTGACGGCTGCTCAGCTGCTGGTGAATGACAGTAGTTTCAGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                     ATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGCTTACTATGAGACTATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTACAGACAGTTAGTCAATAGCAGCTTTGCGGATCTCCAGAAGCCTCAGCATGAACTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAAGCCTCAGACTGAACTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCTTGCGGAATTAAACTCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTAAAGACGTCAAGCGTATCGTCGTTAAGGTTGGAACAGCTGTTGTAACTGGGAAAGGTG
                                                                                                                                                                                                                                                                                                                                          TTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGACAGTAGTTTTAGAGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTGGAGGAGGTTTTGGTAGGCGGGGACAATGGAGGAGCTAGATCGTTCACGCGCTTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /Godon_start=1
//godon_start=1
//protein_de="delta 1-pyrroline-5-carboxylate synthetase A"
//protein_id="AakO1360.1"
//protein_id="AakO1360.1"
//db_xref="d]:12667249"
//tanslation="MESILDRSRAFAKDVKRIVVKVGTAVVTGKGGRLALGRLGALCEQ
//translation="MESILDRSRAFAKDVKRIVVKVGTAVVTGKGGRLALGRLGALCEQ
//translation="MESILDRSRAFAKDVKRIVVKVGTAVVTGKGGRLALGRLGALCEQ
//translation="MESILDRSRAFAKDVKRIVVKVGTAVVTGKGGRLALGRLGACCAGVGQSS
LMAYYETMFDQLDVTAAQLLVNDSSFRDKGLHXITLSGVVGLYTGPSDENSKLHTFI
TRANSPODSSGIFMDNNS-LAALILALELKADLLILISUVGLYTGPSDENSKLHTFI
KEKHQDEITFGDKSRIGRGGMFAKVKAVVNAYAGIFVITTGSVARABULDKVLRGLRV
GTLFHQDARLMAPITDSTARDMAVAARESSRKLQALSSEDRKQILYSIADALEANEKT
GTLFHQDARLMAPITDSTARDMAVAARESSRKLQALSSEDRKQILYSIADALEANEKT
IRANBLDLVATAQEAGLEESLVARLVMTPAKISSLAASVRKLADMEDPIGRVLKKTEV
ADGIVLEKTSSPIGULLIVFSERSIPDLLVGJALSLATSGNGLLLKGGNAVLKHTKIPVL
GHADGICHVYUDKACKVDMAKRIVSDAKLDYBAACNAMETLLVHXDLEQNAVLNELIF
ALQSHGWTLYGGKASKILNLPEARSGNALDSGARGTUSDLVGANDHIHRHGSAH
TDCIVTEDPEYAELFLAGVDDSAAVFHNASTRFSDGFRFGLGAEVGISTGRIHARGPVG
VEGLLTTRWIMRGKGGVVDGDNGITYTHQDIFIQA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:3708"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Brassica napus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="Bnp5cs1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   type="mRNA'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 1864.6;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches 279; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 2551;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                        544
                                                                                                                                                                                                                                                                                                     484
                                                                                                                                                                                                                                                                                                                                          497
                                                                                                                                                                                                                                                                                                                                                                                                                     437
                        737
                                                                664
                                                                                                     677
                                                                                                                                             604
                                                                                                                                                                                  617
                                                                                                                                                                                                                                                                                                                                                                                  424
                                                                                                                                                                                                                                                                                                                                                                                                                                                             364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6
                                                                                                                      S
                                                                                                                                                              β,
                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
        밁
                                       δ
                                                                                   멍
                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
        1745
                                                                                                                                                                                                                                                                                1578
                                                                                                                                                                                                                                                                                                                       1505
                                                                                                                                                                                                                                                                                                                                                           1518
                                                                                                                                                                                                                                                                                                                                                                                                  1445
                                                                                                                                                                                                                                                                                                                                                                                                                                          1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1038
                                                                                                                                                                                                     1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1325
                                                                                                                          1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             738 CAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGAGATTACATTCGGCGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     665 TTCTGATTCTTGAGTGATGTCGAAGGTCTTTACACTGGCCCTCCAAGTGACCCTAACT
      TGCATAAGGATCTGGAGCAGAACGCTGTGCTCAATGAGCTTATATTTGCTCTGCAGAGCA
                                     TGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTATTTTTTGCTCTGCAGAGCA
                                                                                                                      TAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTG
                                                                                                                                                                                                                                                                            GAGAAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTCAGTTCGTAAGCTAGCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGAGAAAACAATCAGAGCTGAGAATGAATTAGATGTGGCTACAGCACAAGAAGCTGGAC 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTAGAGGACTGCGTGTTGGAACCTTGTTCCATCAAGATGCTCGTTTATGGGCTCCTATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rcagaggactacgtgtttggaaccttgtttcatcaagatgctcgtttatgggctccgatca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATCAAGATTAGGGAGAGGGGGTATGACTGCAAAAGTCAAAGCTGCAGTCAATGCAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAAGCTGATCCACCTTCATCAAGGAGAAACATCAAGACGAGATTACATTTGGCGACA
                                                                                     TAGTTTCTGATGCAAAGTTAGACTATCCAGCAGCTTGTAATGCCATGGAAACTCTTCTTG
                                                                                                                                                                CTGATGGAATCTGTCATGTATATGTGGACAAGGCTTGTAATGTGGATATGGCTAAACGCA
                                                                                                                                                                                                 CTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCA
                                                                                                                                                                                                                                             GCAGCAACAAGCTTGTTTCCCAGATTAAAAACACTACAAAAATCCCTGTTCTTGGTCATG
                                                                                                                                                                                                                                                                                                                     GGGAAGAGATTCCTGATTTGCTCAAGCTTGATGACGTTATTGATCTTGTGATCCCAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                  TGATAACTGATGCTATTCCAGAGACTGTTGGTGGTAAACTCATTGGACTTGTGACTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                        TGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAAACTCATTGGACTTGTGACTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGGTCTTCTATTGAAGGGTGGAAAGGAGGCCAGGAGATCAAATGCTATCTTACACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTTGAGTCTCGACCTGATGCACTTGTACAGATAGCTTCACTTGCTATCCGGAGTGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGTGGCAGATGGTCTTGTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTCAGTTCGTAAGCTAGCTGATATGGAAGATCCAATTGGCCGTGTTCTAAAGAAAACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGAAGAGTCATTGGTGGCTCGTTTGGTGATGACACCTGCAAAGATCTCGAGCCTTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTTATCTTCGGAGGATAGGAAGCAGATACTGTATAGTATCGCAGATGCTCTTGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTTATCTTCGGAAGACAGGAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGATTCTACTGCTCGTGACATGGCAGTAGCTGCGAGGGAAAGTTCCAGGAAGCTTCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGCTGGTATCCCTGTCATCATAACCAGTGGCTATGCAGCTGAGAACATAGATAAGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <u>AGTCAAGACTAGGAAGAGGAGGCATGACTGCAAAAGTGAAAGCTGCAGTGAATGCAGCTT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAA
        1804
                                           . 1817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1084
                                                                                                                                                                1684
                                                                                                                                                                                                                                             1624
                                                                                                                                                                                                                                                                                1637
                                                                                                                                                                                                                                                                                                                                                               1577
                                                                                                                                                                                                                                                                                                                                                                                                    1504
                                                                                                                                                                                                                                                                                                                                                                                                                                          1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        784
                                                                                                                                                                                                     1697
                                                                                                                                                                                                                                                                                                                       1564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1264
```

```
RESULT 10
ATP5CS2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             뭕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                              REFERENCE
                                                                                                                                                                                                             SOURCE
ORGANISM
                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                 TITLE
                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1878
                                                                                                                                                                                                                                                                                                                                                                                                                                                    2492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2526 A 2526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1805 ATGGAGTCACTTTGTATGGTGGACCAAAGGCAAGTAAAATACTTAACCTACCAGAAGCAC 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1818
                                                                                                                                         P5CS2 gene; pyrroline-5-carboxlyate synthetase.
Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Spermatophyta; Magnoliophyta; eudicotyledons; Arabidopsis.
Strizhov,N., Abraham,E., Okresz,L., Blickling,S., Zilberstein,A. Schell,J., Koncz,C. and Szabados,L. Differential expression of two P5CS genes controlling proline accumulation during salt-stress requires ABA and is regulated by ABA1, ABI1 and AXR2 in Arabidopsis plant J. 12 (3), 557-569 (1997)
                                                                                                                                                                                                                                                                             Y09355.1 GI:1669657
                                                                                                                                                                                                                                                                                                   235607
                                                                                                                                                                                                                                                                                                                        A.thaliana mRNA for pyrroline-5-carboxlyate synthetase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    A 2492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGTC-TTGCTCATAAGTACGATGAAGAACATTTAATTAGCTTCTCTTCTTGTCATTGTA 2525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTGATTTAGGGTT--AGGATTGCACCAAAAATAAGATCC-----ACTTTACCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATCCTATTATTATTGTTGTTGAAAACCCTCTCTTATAA-----AGTGAAGTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATCCTATCATTATTATTACTACTACTACTTATTATTGAAACCCTCGCTTATGTAGTGGT 2417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGACATTCCCATCCAAGCTTAGAAGACTTTGTGTGAAGTCTTTCTGTG-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGATAATGAGAGAAAAGGACAAGTTGTCGACGGAGACAATGGAATTGTTTACACCCATC 2237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCACAGGGAGGATCCATGCCCGTGGTCCAGTGGGGAGTAGAGGGGACTACTTACAACCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTTTCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTCGTTCAATCACGAGTACTGTTCCAAGGCGTGCACTGTTGAAGTTGTAGAAGATGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTCATTCAACCATGAGTACTGTGGCCAAGGCTTGCACTGTTGAAGTTTGTAGAAGACGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGGAGTCACTTTGTATGGTGGACCAAGGCAAGTAAGATACTGAACATACCAGAAGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTGATTTAGGGTTTAGGGATTGCACCAAAAATAAGTTCCTTTGTTCTGTTTTTACCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACGCAAGCACAAGATTCTCTGATGGTTTTCGATTTGGACTTGGTGCTGAGGTGGGGATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGATCCCGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGACAGCGCTGCTGTGTTCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              bases 1 to 2440)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGACTAGGAGAGGATGGGCTTTTTGTTTCCTCTCTGCTAA--TATCA
                                                                                                                                                                                                                                                                                                                                            2440 bp
                                                                                                                                                                                                                                                                                                                                              mRNA
                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                            PLN 15-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                      밁
                                                          S
                                                                                                        밁
                                                                                                                                            S
                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                    125
                                                                                                                                                   397
                                                                                                                                                                                             305
                                                                                                                                                                                                                                      337
                                                                                                                                                                                                                                                                             245
                                                                                                                                                                                                                                                                                                                        277
                                                                                                                                                                                                                                                                                                                                                                                                         217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98012527
9351242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
Submitted (11-NOV-1996) N. Strizhov, Max-Planck-Inst. fuer
Zuechtungsforsch., Abt. J.Schell, Carl-Von-Linne-Weg 10, D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Corresponding genomic sequence: X86778.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Koeln, FRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Strizhov, N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     h 65.1%; Score 1673.4; DB 8; Length 2440;
Similarity 86.0%; Pred. No. 0;
54; Conservative 0; Mismatches 301; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACACAAACTATGACGGAGATCGATCGTTCACGCGCGTTCGCCAAAGACGTTAAGCGTAT 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACGACGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTAT
                                                                                                                                                                                             CAGCAGTTTTGCAGATTTACAGAAGCCACAAATGGAACTTGATGGGAAGGCTTGTGCTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGTCGTCAAGGTTGGACTGCAGTTGTTACTGGGAAAGGTGGAAGATTGGCTCTTGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGTCGTTAAGGTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCG
                                                                                                                                                                                                                                                                             GGTGTCATCTGGTGCCGTTGGTCTTGGTCGACAAAGGCTTCGATACAGACAATTAGTCAA
                      GGTTGCTCAAATGCTTGTGACCGATAGCAGTTTTAGAGATAAGGATTTCAGGAAGCAACT 484
                                                                 GGCAGCTCAACTTCTGGTGAATGACAGTAGTTTTTAGAGACAAGGATTTCAGGAAGCAACT 516
                                                                                                                                     TGTTGGACAAAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGAC
                                                                                                                                                                                                                                    TAGCAGCTTTGCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGG
                                                                                                                                                                                                                                                                                                                        GGTGTCATCTGGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                         TGTTGGGCAGAGCAGTCTCATGGCTTACTATGAGACTATGTTTGACCAGTTGGATGTGAC
                                                                                                                                                                                                                                                                                                                                                                TTTAGGAGCTATCTGTGAACAGCTTGCGGAGTTAAACTCAGATGGATTTGAGGTCATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 2440)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="MTEIDRSRAFAKDVKRIVVKVGTAVVTGKGGRLALGRICAG
LABLNSDGFEVILVSSGAVGLGRQRLAYRQLVNSSFADLQKPGMELDGKACAGVGGSS
LMAYYETMEDQLDVTVAQMLVTDSSFRDVDFRKQLSTYTGAPSDSTSKLIFTFI
TRAAPYKDSTGIFMDNDSLAALLSLEILKADLLILLSDVGGLYTGAPSDSTSKLIFTFI
KEKGIQDEITFGEKSKLGRGGMTAKVKRAVNAAYGGVPVITTSGYAARNISKTLAHFFI
KEKGIQDEITFGEKSKLGRGGMTAKVKRAVNAAYGGVPVITTSGYAARNISKTLAMLEV
GTLFHQDAHLMAPVDTTSEDMAVAARESSRKLDASSDRKQILHDIANALEVNEKT
IKAENDLDVAAAQEAGYEESIVAALVNKFAKSSKLAASVRQLAEMEDPIGKVLKKTOV
ADDLIIEKTSSPIGVLLIVFESRPDALVQIASLAIRSGNGLLLKGGKEARRSNAILHK
VITDAIPSTYGGKLIGLVTSREBIPDLLKLDDVIDLIVINGSKEARRSNAILHK
VITDAIPSTYGGKLIGLVTSKEBIPDLLKLDDVIDLIVINGSKEARRSNAILHK
VITDAIPSTYGGKLIGLVTSKEBIPDLLKDDVFAKCTVEIVEDVYGAIDHIHQHGSAH
TUQTIKTTUTGGERAAKLNIPETKSFHHEYSSKACTVEIVEDVYGAIDHIHQHGSAH
TUQTIKTTUTGGEVABITELROVDSAAVEHAASTRESDGFREGLAARVGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /product="pyrroline-5-carboxlyate synthetase"
/protein_id="CAA70527.1"
/db_xref="GI:169658"
/db_xref="GOA:154888"
/db_xref="SWISS-PROT:P54888"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="P5CS2"
75. .2255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VEGLLTTRWIMRGKGQVVDGDNGIVYTHKDLPVLQRTEAVENGI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="P5CS2"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="pNSZ1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /sub_species="ecotype Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .2440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .2440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          D-50829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
```

216

156

0,

456 364 396 304 336 244 276 184

S 밁 밁

ð

밁 Ś 밁 Ś 밁 Ś 뮍 Ś 밁

밁 S B Ś 밁 Š 片 Š 밁 Ś

В Ś В Ş

```
RESULT 11
AY091766
                                                                                                                            맑
                                                                                                                                                            Ś
                                                                                                                                                                                               뭐
                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                       吊
                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
   ACCESSION
                      DEFINITION
                                       Focus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1565
                                                                                                                            2165
                                                                                                                                                                                               2105
                                                                                                                                                                                                                                   2137
                                                                                                                                                                                                                                                                                                                                         1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                1957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1685
Arabidopsis thaliana AT3g55610/F1I16_20 mRNA, complete cds.
AY091766
                                                                                                                            ACAAGTTGTGGATGGAGACAATGGAATCGTTTACACCCATAAGGATCTTCCTGTC
                                                                                                                                                   ACAAGTTGTCGACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCCATC 2251
                                                                                                                                                                                                                                                                                                                                       AATATTCCTCCGCCAAGTGGACAGTGCTGCTGTTTTCCACAATGCAAGCACAAGATTCTC
                                                                                                                                                                                                                                                                                                                                                                           GCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTTTCCACAACGCCAGCACAAGATTCTC 2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAATGGTTTTCTCGATGATCTTATTTATGTTCTGCAAACCAAAGGCGTCACTTTGTATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTACATAAAGATTTGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATATGTTGATAAGTCTGGTAAACTGGACATGGCAAAGCGCATTGTTTCCGATGCAAAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTT
                                                                                                                                                                                               CCGTGGTCCAGTTGGAGTTGAAGGATTATTGACAACAAGATGGATAATGAGAGGAAAGGG
                                                                                                                                                                                                                                   AGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGATCCATGC
                                                                                                                                                                                                                                                                                                                                                                                                              TCACCAACATGGAAGTGCACACACTGATTGCATAGTGACGGAAGATAGTGAAGTAGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGTTCCAAGGCCTGCACCGTTGAAATTGTAGAAGACGTATATGGTGCTATAGATCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGACCAAGGGCAAGTAAGATACTGAACCATACCAGAAGCACGTCATTCAACCATGAGTA 1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAAATAAAAACTCGACGAAAATCCCAGTGCTAGGCCATGCTGATGGAATCTGTCATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                              TCACCGACATGGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGGCCAAGAGCAAGTGCAAAACTGAATATTCCGGAAACAAAATCATTTCACCACGAGTA
                                                                                                                                                                                                                                                                        TTTTAGGTTCGGACTTGGTGCTGAGGTGGGAATAAGCACAAGCAGGATTCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PLN 13-APR-2002
                                                                                                                            2219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1716
                                                                                                                                                                                                                                 2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                 2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1684
                                                                                                                                                                                                                                                                      2104
                                                                                                                                                                                                                                                                                                        2136
                                                                                                                                                                                                                                                                                                                                                                                                              1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1624
                                                                                                                                                                                                 2164
                                                                                                                                                                                                                                                                                                                                           2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1804
```

REFERENCE AUTHORS

VERSION KEYWORDS SOURCE TITLE ORGANISM 1 (bases 1 to 2517)
Shinn, P., Chen, H., Cheuk, R., Kim, C.J., Meyers, M.C., Banh, J., Bhinn, P., Chen, H., Chang, E., Dale, J.M., Goldsmith, A.D., Bowser, L., Carninci, P., Chang, E., Dale, J.M., Goldsmith, A.D., Hayashizaki, Y., Ishida, J., Jones, T., Kamiya, A., Karlin-Neumann, G., Hayashizaki, Y., Lam, B., Lee, J.M., Lin, J., Miranda, M., Narusaka, M., Nguyen, M., Onodera, C.S., Palm, C.J., Quach, H.L., Sakurai, T., Sakurai, T., Sakurai, Seki, M., Southwick, A., Tang, C.C., Toriumi, M., Wu, H.C., Yamada, K., Yamamura, Y., Yu, G., Yu, S., Shinozaki, K., Davis, R.W., Theologis, A. and Ecker, J.R. Arabidopsis thaliana
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis. Unpublished AY091766.1 FLI_CDNA. Arabidopsis cDNA clones Arabidopsis thaliana (thale cress) GI:20147196

JOURNAL REFERENCE AUTHORS

Ś 멼 Ś 멼 5 밁 Ś 유 Ś

1597 TCAGATAAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGT 1656

2 (bases 1 to 2517)
Shinn, P., Chen, H., Cheuk, R., Kim, C.J., Meyers, M.C., Banh, J.,
Bowser, L., Carninci, P., Chang, E., Dale, J.M., Goldsmith, A.D.,
Hayashizaki, Y., Ishida, J., Jones, T., Kamiya, A., Karlin-Neumann, G.,
Kawai, J., Lam, B., Lee, J.M., Lin, J., Miranda, M., Narusaka, M.,
Nguyen, M., Onodera, C.S., Palm, C.J., Quach, H.L., Sakurai, T.,

```
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 1854; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                 277
                                                                                                                                                                                          155
                                                                                                                                                                                                                                                                                                   95 GACACAAACTATGACGGAGATCGATCGTTCACGCGCGTTCGCCAAAGACGTTAAGCGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RIKEN Genomic Sciences Center (GSC) members carried out the collection and clustering of RAFL CDNAs (ARFL CDNA : 'RIKEN Arabidopsis Full-Length CDNA'): Seki,M., Narusaka,M., Ishida,J., Satou,M., Kamiya,A., Sakurai,T., Carninci,P., Kawai,J., Hayashizaki,Y. and Shinozaki,K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The Salk, Stanford, PGEC (SSP) Consortium members carried out the sequencing and annotation of the RAFL CDNAs: Shima, P., Chen, H., Cheuk, R., Kim, C.J., Meyers, M.C., Banh, J. Bowser, L., Chang, B., Dale, J.M., Goldsmith, A.D., Jones, T., Karlin-Neumann, G., Lam, B., Lee, J.M., Lin, J., Miranda, M., Nguyen, M., Onodera, C.S., Palm, C.J., Quach, H.L., Southwick, A., Tang, C.C., Toriumi, M., Wu, H.C., Yamanda, K., Yamamura, Y., Yu, G., Yu, S., Davis, R.W., Theologis, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (26-MAR-2002) Salk Institute Genomic Analysis Laboratory (SIGNAL), Plant Biology Laboratory, The Salk Institute for Biological Studies, 10010 N. Torrey Pines Road, La Jolla, CA 92037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Shinn, P. (SSP/Salk) and Seki, M. (RIKEN GSC) contributed equall this work. Shinozaki, K. (RIKEN GSC) and Ecker, J.R. (SSP/Salk) contributed equally to this work as PIs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Satou,M., Seki,M., Southwick,A., Tang,C.C., Toriumi,M., Wu,H.C., Yamada,K., Yamamura,Y., Yu,G., Yu,S., Shinozaki,K., Davis,R.W., Theologis,A. and Ecker,J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                      GACGACGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTAT 156
GGTGTCATCTGGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAA
                                                                                    TTTAGGAGCTATCTGTGAACAGCTTGCGGAGTTAAACTCAGATGGATTTGAGGTCATTTT
                                                                                                                                       CGTCGTCAAGGTTGGGACTGCAGTTGTTACTGGGAAAGGTGGAAGATTGGCTCTTGGACG
                                                                                                                                                                                                                                                CGTCGTTAAGGTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCG
                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /translation="MTELDRSRAFAKDVKRIVVKVGTAVVTGKGGRLALGRIGAICEQ
/LAELMSDGFEVILVSSGAVGLGRQRLKTRQLIVMSSFADLQKPQVELDGKACAGVGQSS
LMAYYETMFDQLDVIVAQMLVTDSSFADLXDFRQLSSTVKAMLKMRVIPVERNDAIS
TRRAPYSDSTGJFWDNDSLAALLSLELKADLLILLSDVEGLYTGSPSDSTSKLIHTFI
KEKHQDEITFGEKSKLGRGGMTAKVKAAVNAAYGGVPVITTGSYAABLSKULRGKVLRGLRV
GTLFHQDAHLMAPVVDTTSRDMAVAARESSRKLQALSSEDRKQILHDIANALEVNEKT
IKAENDLDVAAAQEAGYEESLVARLVMKEGKISSLAASVRQLAEMEDPIGRVLKKTQV
ADDLILEKTSGPIGVLLIVFESRPDALVQIASLAIRSGNGLLLKGGKEARRSNAILHK
VITDAIPETVGGKLIGLVTSRESIPDLLKLDVPAACNAMETLLVKGGKEARRSNAILHK
VITDAIPETVGGKLIGLVTSRESIPDLLKLDVBACNAMETLLVHKDLEQNGFLDDLIY
VLQTKGVTLYGGPRASAKINIPETKSFHHEYSSKACTVEIVEDVVGAIDHIHQHGSAH
TDCIVTEDSEVAEIFLRQVDSAAVFHNASTREBGGFRFGLGABVGISTSRIHARGBVG
TDCIVTEDSEVAEIFLRQVDSAAVFHNASTREBGGFRFGLGABVGISTSRIHARGBVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VEGLLTTRWIMRGKGQVVDGDNGIVYTHKDLPVLQRTEAVENGI"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
/product="ATT3955610/F1116_20"
/protein_id="AAM10314_1"
/db_xref="GI:20147197"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="delta-1-pyrroline-5-carboxylate synthetase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ecotype="Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              clone="RAFL05-15-M09(R21841)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    chromosome="3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 _xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                  65.1%;
86.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1673.4;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches 301; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (RIKEN GSC) contributed equally to GSC) and Ecker, J.R. (SSP/Salk)
                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CA 92037
                                    . 336
                                                                                                                                                                                                                                                216
                                                                                       274
                                                                                                                                             276
                                                                                                                                                                                                                                                                                                         154
                                                                                                                                                                                             214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ᅜ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                     S
                                                                                                                 밁
                                                                                                                                                           Ş
                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
           1355
                                                                                                                                                                                                                                                                                                                               1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        335 CAGCAGTTTTGCAGATTTACAGAAGCCACAAATGGAACTTGATGGGAAGGCTTGTGCTGG 394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                275 GGTGTCATCTGGTGCCGTTGGTCTTGGTCGACAAAGGCTTCGATACAGACAATTAGTCAA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      757 TGTTAAAGAAAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGCAGCTTTGCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGG 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTTGAGGGCCTTTACACTGGCCCCTCCAAGTGATTCTACCTCAAAATTAATACACACATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGCTTAGCTGCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAGTGAAACTGTCAAAGCGATGCTGAGGATGAGGGTTATTCCAGTTTTTCAATGAGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCAGCTCAACTTCTGGTGAATGACAGTAGTTTTTAGAGACAAGGATTTCAGGAAGCAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTTGGGCAGAGCAGTCTCATGGCTTACTATGAGACTATGTTTGACCAGTTGGATGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTTGGACAAAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGAC 456
           TGCACTTGTTCAGATAGCTTCGCTTGCAATCCGGAGTGGAAATGGTCTTCTGCTGAAGGG
                                                TGCACITGTACAGATAGCITCACTIGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGG 1416
                                                                                                                                                           CTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGA
                                                                                                                                                                                                                                                                                                                                                                       TCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAGC 1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TACCCTGTTCCATCAAGATGCTCATTTATGGGCTCCGGTCGTAGATACTACTTCTCGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACCTTGTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATAACCAGTGGATATGCAGCTGAGAATATAAGTAAAGTCCTTAGAGGACTGCGTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGTATGACTGCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGCTTAGCCGCTCTTCTGTCGCTAGAGCTGAAAGCTGATCTTTTGATTCTTCTAAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCTATTAGCACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGA 636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATGAAACTGTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTTGCTCAAATGCTTGTGACCGATAGCAGTTTTAGAGATAAGGATTTCAGGAAGCAACT
                                                                                                                                                                                                                            CGAAATGGAAGATCCAATAGGCCGTGTATTAAAGAAAACTCAGGTTGCAGATGATCTTAT
                                                                                                                                                                                                                                                                               TGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGT
                                                                                                                                                                                                                                                                                                                               TCGCTTAGTTATGAAGCCTGGGAAGATCTCAAGCCTTGCAGCTTCCGTTCGCCAGCTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAGAATGATTTAGATGTTGCTGCAGCACAAGAAGCTGGATATGAAGAGTCTTTGGTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAACAAATTCTACACGACATTGCCAATGCCCTTGAAGTAAATGAGAAAACAATTAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATGGCAGTTGCTGCAAGGGAAAGCTCAAGAAAGCTTCAGGCCTTATCTTCAGAAGATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATAACCAGTGGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGTATGACTGCAAAAGCTTAAAGCTGCTGTTAATGCAGCTTATGGTGGCGTTCCTGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTTGAAGGTCTTTACACAGGCCCCCCAAGTGATCCTAACTCAAAGTTGATCCACACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         576
              1414
                                                                                                                      1354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1114
                                                                                                                                                                                                                            1294
                                                                                                                                                                                                                                                                                                                                                                                                                                           1174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     454
                                                                                                                                                                                                                                                                                  1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1054
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               754
```

밁

Ş

밁 Ś 밁 5

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                          RESULT 12
AX507171
LOCUS
                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                       KEYWORDS
                                                                                                                                 DEFINITION
ACCESSION
                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                            멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1957
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1777
                                                                                                                                                                                                                             2195
                                                                                                                                                                                                                                                                              2135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1537
Harper, J.F., Kreps, J., Wang, X. and Zhu, T. Stress-regulated genes of plants, transgenic plants containing
                                     Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
Arabidopsis thaliana
Eukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Epermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                21
Sequence 1866 from Patent
AX507171
                                                                                                                     AX507171.1 GI:23388408
                                                                                                                                                                                                                          ACAAGTTGTGGATGGAGACAATGGAATCGTTTACACCCATAAGGATCTTCCTGTC 2249
                                                                                                                                                                                                                                                                                                      AGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGC
                                                                                                                                                                                                                                                                                                                                                                                     AATATTCCTCCGCCAAGTGGACAGTGCTGCTGTTTTCCACAATGCAAGCACAAGATTCTC
                                                                                                                                                                                                                                                                                                                                                                                                      GCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGTTCCAAGGCCTGCACCGTTGAAATTGTAGAAGACGTATATGGTGCTATAGATCATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTTATGGTGCTATAGATCACAT 1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAATGGTTTTCTCGATGATCTTATTTATGTTCTGCAAACCAAAGGCGTCACTTTGTATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTACATAAAGATTTGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCA 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAGACTGTTGGGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAAAGAGATTCCTGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGAAAGGAGGCTCGTCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGGAAAGGAGGCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCC 1476
                                                                                                                                                                                                                                                  ACAAGTTGTCGACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATC 2251
                                                                                                                                                                                                                                                                              CCGTGGTCCAGTTGGAGTTGAAGGATTATTGACAAGATGGATAATGAGAGGAAAGGG
                                                                                                                                                                                                                                                                                                                                   TGATGGTTTTAGGTTCGGACTTGGTGCTGAGGTGGGAATAAGCACAAGCAGGATTCATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                       TCACCAACATGGAAGTGCACACACTGATTGCATAGTGACGGAAGATAGTGAAGTAGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCACCGACATGGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGGACCAAGGGCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTA 1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATATGTTGATAAGTCTGGTAAACTGGACATGGCAAAGCGCATTGTTTCCGATGCAAAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCAAATAAAAACTCGACGAAAATCCCAGTGCTAGGCCATGCTGATGGAATCTGTCATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCAGATAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTCAAGCTTGATGACGTTATTGATCTTGTGATCCCAAGAGGCAGCAACAAGCTTGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGGGCCAAGAGCAAGTGCAAAACTGAATATTCCGGAAACAAAATCATTTCACCACGAGTA
                                                                                                                                              2181 bp |
1t WO0216655
                                                                                                                                                         DNA
                                                                                                                                                            linear
                                                                                                                                                            PAT
                                                                                                                                                             27-SEP-2002
                                                                                                                                                                                                                                                                                                       2196
                                                                                                                                                                                                                                                                                                                                                          2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . 1774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1474
                                                                                                                                                                                                                                                                                                                                                                                                              2076
                                                                                                                                                                                                                                                                                                                                                                                                                                       2014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1596
                                                                                                                                                                                                                                                                                                                                 2134
                                                                                                                                                                                                                                                                                                                                                                                     2074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1656
                                                                                                                                                                                                                                                                               2194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2016
                                       В
                                                              Ś
                                                                                           片
                                                                                                                8
                                                                                                                                            밁
                                                                                                                                                                    S
                                                                                                                                                                                                 밁
                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                               Š
                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                   片
                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       გ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                               361
                                                                 887
                                                                                                                                              661
                                                                                                                                                                                                                          707
                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                              647
                                                                                                                                                                                                                                                                                                                                 587
                                                                                                                                                                                                                                                                                                                                                                                     527
                                                                                                                                                                                                                                                                                                                                                                                                                                       467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       167
                                                                                                                                                                       767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
```

```
1848; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    107 ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ATGACGGAGATCGATCGTTCACGCGCGTTCGCCAAAGACGTTAAGCGTATCGTCGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              same, and methods of use
Patent: WO 0216655-A 1866 28-FEB-2002;
The Scripps Research Institute (US) ; Syngenta Participations AG (CH)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64.9%;
Similarity 86.2%;
CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT 1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA
                                                     GGATATGCAGCTGAGAATATAAGTAAAGTCCTTAGAGGACTGCGTGTTGGTACCCTGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTCGCAGAGCCCCCTACAAGGATTCTACTGGTATATTTTGGGATAATGACAGCTTAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTGGGACTGCAGTTGTTACTGGGAAAGGTGGAAGATTGGCTCTTGGACGTTTAGGAGCT
                                                                                                        GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT
                                                                                                                                                                GCAAAAGTTAAAGCTGCTGTTAATGCAGCTTATGGTGGCGTTCCTGTTATCATAACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTCTTCTGTCGCTAGAGCTGAAAGCTGATCTTTTGATTCTTCTAAGTGATGTTGAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATCTTCTGAGCGATGTTGAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCAAAGCGATGCTGAGGATGAGGGTTATTCCAGTTTTCAATGAGAATGATGCTATAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGCTTGTGACCGATAGCAGTTTTAGAGATAAGGATTTCAGGAAGCAACTTAGTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCAGTCTCATGGCTTACTATGAGACTATGTTTGACCAGTTGGATGTGACGGTTGCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAGATTTACAGAAGCCACAAATGGAACTTGATGGGAAGGCTTGTGCTGCTGTTTGGGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTGCCGTTGGTCTTGGTCGACAAAGGCTTCGATACAGACAATTAGTCAACAGCAGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATCTGTGAACAGCTTGCGGAGTTAAACTCAGATGGATTTGAGGTCATTTTGGTGTCATCT
                                                                                                                                                                                                          GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGAATTCCTGTCATCATAACCAGT
                                                                                                                                                                                                                                                                              ANACACCAGGACGAGATTACTTTTGGCGAAAAGTCCAAATTAGGACGAGGGGGTATGACT
                                                                                                                                                                                                                                                                                                                                    AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACT
                                                                                                                                                                                                                                                                                                                                                                                                CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTTGTTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCAAGTCTATGCTTGATTTGAGGGTTATTTCCAATTTTCAATGAGAATGATGCTATTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Arabidopsis thaliana"
/mol_type="unassigned DNA"
/db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 1669.8; DB 6; Length Pred. No. 0; 0; Mismatches 297; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                              946
                                                                                                                                                                      780
                                                                                                                                                                                                                                                                                                                                       826
                                                                                                                                                                                                                                                                                                                                                                                                                                                  766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          166
                                                                                                                                                                                                                                                                              720
                                                                                                                                                                                                                                                                                                                                                                                                660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0
```

Ş

맑

Ś 밁

밁

밁

Ş

밁

5

```
1127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1067
                                                                                                                                                                                                                                                              1801
                                                                                                                                                                                                                                                                                                                          1907
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1427
                                                                                                                                                                                                                                                                                                                                                                                                 1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATCCAATAGGCCGTGTATTAAAGAAAACTCAGGTTGCAGATGATCTTATTTTAGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATT 1066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATCAAGATGCTCATTTATGGGCTCCGGTCGTAGATACTTCTCCGTGACATGGCAGTT 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAGGTAAACTCATAGGACTTGTGACCTCAAGAGAGGAGATTCCTGATTTTGCTCAAGCTT 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCTCATCACCAATAGGTGTTCTTGTTTTTTGAATCCCGGCCTGATGCACTTGTT 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTACACGACATTGCCAATGCCCTTGAAGTAAATGAGAAAACAATTAAAGCTGAGAATGAT 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGCAAGGGAAAGCTCAAGAAAGCTTCAGGCCTTATCTTCAGAAGATAGGAAAACAAATT 960
                                   CGCCAAGTGGATAGCGCTGCTGTTCTCACAACGCCAGCACAAGATTCTCAGATGGTTTC 2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA 1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AACTCGACGAAAATCCCAGTGCTAGGCCATGCTGATGGAATCTGTCATGTATATGTTGAT 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGACGTTATTGATCTTGTGATCCCAAGAGGCAGCAACAAGCTTGTTTCTCAAATAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAA 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTCGTCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCGGAGACTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGGTATCTTCGCTTGCAATCCGGAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG 1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTTGAATCCCGACCTGATGCACTTGTA 1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATCCAATCGGCCGTGTTTTAAAGAAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTAGATGTTGCTGCAGCACAAGAAGCTGGATATGAAGAGTCTTTGGTAGCTCGCTTAGTT 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG 1126
                                                                                                                               GGAAGTGCÁCACTGATTGCATAGTGÁCGGÁAGATAGTGAÁGTAGCAGAAATATTCCTC
                                                                                                                                                                                       GGGAGTGCACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT 2026
                                                                                                                                                                                                                                                          GCCTGCACCGTTGAAATTGTAGAAGACGTATATGGTGCTATAGATCATATTCACCAACAT
                                                                                                                                                                                                                                                                                                                          GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT 1966
                                                                                                                                                                                                                                                                                                                                                                                                 GCAAGTGCAAAACTGAATATTCCGGAAACAAAATCATTTCACCACGAGTACAGTTCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG 1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCGATGATCTTATTTATGTTCTGCAAACCAAAGGCGTCACTTTGTATGGTGGGCCAAGA 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAGCCTGTAATGCGATGGAAACCCTTCTTGTACATAAAGATTTGGAGCAGAATGGTTTT 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGTCTGGTAAACTGGACATGGCAAAGCGCATTGTTTCCGATGCAAAGTTGGACTATCCA
CGCCAAGTGGACAGTGCTGTTTTTCCACAATGCAAGCACAAGATTCTCTGATGGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1306
                                                                                                                           1920
                                                                                                                                                                                                                                                              1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1320
                                                                                                                                                                                                                                                                                                                                                                                                 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1200
```

B

Ś 밁 S 맑 S 밁 S 밁 Ś

S 밁 Ś 밁 S

밁 Ś 뮍

S 밁 Ś

ACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGTTGTTAC 186

CTCTCTCTCTGTCTTGTTTTTG-ATAAGAAGCTAGCTATGGAGGATGAGATAGATCGTTC 142

CTCTCTCTGTGTGTGGTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGATCGTTC

1868;

Conservative

0

Indels

1;

Gaps

۲,

밁 Ś 문 S 片 δ 밁 Ś

밁 Ś

```
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
AF314812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
TITLE
                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1981 AGGTTCGGACTTGGTGCTGAGGTGGGAATAAGCACAAGCAGGATTCATGCCCCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2101 GATGGAGACAATGGAATCGTTTACACCCATAAGGATCTTCCTGTC 2145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2087 CGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; roside; euroside II; Brassicales; Brassicaceae; Brassica.

1 (bases 1 to 2529)

1 (Bases 1 to 2529)

1 (Rang, Y. H. and Lee, S.Y.

1 Isolation of a gene encoding the delta 1-pyrroline-5-carboxylate synthetase B in Brassica napus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Brassica napus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complete cds
AF314812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rep.of Korea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (19-OCT-2000) Lab. of Biochemistry, Graduate School Biotechnology, 1, 5-ka, Anam-dong, Sungbuk-ku, Secul 136-701,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Brassica napus (rape)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF314812.1 GI:12667250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Brassica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AF314812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kang, Y.H. and Lee, S.Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTGGAGTTGAAGGATTATTGACAACAAGATGGATAATGAGAAGGAAAAGGGACAAGTTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCCATC 2251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 2529)
                                                                                                                                                                                                                                                                                                          / COUNT | COUNT | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROTOCOL | PROT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     napus delta 1-pyrroline-5-carboxylate synthetase B mRNA,
                                                                                                                                                                                             YALQANGVTLYGGPKASGKLNIPEVKSFHHEYSSKACTVEIVEDVHGAIDHIHQHGSA
HTDCIVTEDSEVABIFLRQVDSAAVIHNASTRPCDGFRFGLGAEVGISTSRIHARGPV
GVEGLLTTRWIMRGKGQVVDGDNGVAYTHKDLPVLERTKAVQNGH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1. .2529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /mol_type="mRNA"
/db_xref="taxon:3708"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                note="Bnp5cs2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       organism="Brassica napus"
                                     64.7%;
Score 1662.4; DB 8; Pred. No. 0; Mismatches 329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2529 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                    Length 2529;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PLN 06-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of
fr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2206
```

δ	A 48	d dd	δ	å Š	Ag Ag	A 48	P 64	Qy db	d dd Yo	장	QQ dQ	A 4	D Q	B 8	B &	B 8	음 성	Db .
1207 GAGCCTTGCAGCTTCAGTTCGTAAGCTAGCTGATATGGAAGATCCAATCGGCCGTGTTTT 1266	1147 AGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGAAAGATCTC 1206 	1087 CCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAAGTTAGATGTAGCTTCTGCACA 1146 	1027 AAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATTCTGCTTGATATTGCCGATGC 1086 	967 GGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAGTTCCAG 1026	907 AGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCGTTTATG 966 	847 CAATGCAGCTTATGCTGGGATTCCTGTCATAACCAGTGGGTATTCAGCTGAGAACAT 906	787 ATTCGGCGACAARTCAAGATTAGGGAGAGAGGGGGTATGACTGCAAAAGTCAAAAGTGCAGT 846	727 TGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGAGATTAC 786 	667 GAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTACACAGGCCCTCCAAG 726 	607 GGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTTGGAACT 666 	547 GAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCCATATCA 606 	487 TTTTAGAGAGAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCTTGATTT 546 	427 TGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGACAGTAG 486	367 GACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGCTTACTA 426 	307 GCRAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAAGCCTCA 366	247 ATTAAACTCGGATGGATTTTGAGGTGATATTTGGTGTCATCTGGTGCGGTTTGGTCTTGGCAG 306	187 TGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCTTGCGGA 246	
RESULT 14 ADU92286	g &	}	}	P &	D 5	, ge 45	g ç) b &	, p. 5	S & S	20 49 94 49	, ₽ &	}	D Q) B &	}	? 문	& B
14	222) THAMECHIEMSHAMITECHIEMARAM 209 2243 TTACACTCATAAGGACCTTCCTGTCTTAGAAAGGACAA 2280		GUTGGGGTANGCAGGGGCAGATICATIGCTCGTGGTCCAGTCGAGGTCGAGGGGTCGAGGATTACTT 2 GUTGGGGAATAAGCACAAGCAGGATCCATGCCCGTGGTCCAGTTGGAGTAGAAGGATTATTT 2 GUTGGGGAATAAGCACAAGCAGGATCCATGCCCGTGGTCCAGTTGGAGTAGAAGGATTATTT 2	TGTGTTCCACACGCCAGCACAGATTCTCACATGGTTTCCGATTGGACTTGGTCCAGA	CATIGURACAGAGATIACAGAGTIATICCTTCGCAAGTIGATIAGCGCTGC	AGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGTGCACACACA		TCTGCAGAGCATGGAGTAGCTTGTATGGTGGCCAAGGGCAGGTAGGT	ACCOTTOTTGTGCATAAGGATCTAGAGCAGATGCTGTGCTTAATGAGCTTATTTTTGC	GGCAAAGCGCAFAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCCTGTAATGCGATGGA	GCTAGGTCATGCTGATGGAAATCTGTCATGTATATGTCGACAAGGCTTGTGATACGGATAT 	GATECCAAGAGGAAGCAACCATGTTACTCAGARAAAAATACCATGT GATECCAGARAAAAATCCCTGT GTTACTCAGARAAAATACCCTGT GTTACTCAGARAAAAACTCAACGAAAATCCCAGT GTTTCTCAGARAAAAACTCAACGAAAATCCCAGT	7 TGTGACTTCAAGAGAAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGT	3 7	CGHAGIGGAATGGICTTCTGCTGAAGGTGGAAAAGAGGCCCGGGATCAAATGCTAT CAGAGTGGAAATGGTCTTCTGCTGAAGGTGGAAAAAAAAA	ACITICISATISTITISAATICCCGACCTGATGCACTTGTACAATAGCTTCACTTGCAAT TCTTCTGATTGTTTTTGAATCCCGTCCTGATGCACTTGTTCAGATAGCTTCACTTGCAAT	3 AAAGAAAACTGAGGTTGCAGATGGTCTTATTTTAGAGAAAACCTCATCACCATTAGGTGT	1223 AAGOCTTGCAGCTTCTATTCGCCAGCTAGCTGAAATGGAAGACCCAATTGGTCGTGTTCT 1282

```
밁
                                                            Ś
                                                                                                    밁
                                                                                                                                        Ś
                                                                                                                                                                                 밁
                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 1587;
                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                           244
                                                              342
                                                                                                      184
                                                                                                                                            282
                                                                                                                                                                                 124
                                                                                                                                                                                                                                                                                                                                                                                  102
                                                                                                                                                                                                                                                             64
                                                                                                                                                                                                                                                                                                                                          4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Direct Submission
Submitted (06-MAR-1997) HortResearch,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 (bases 1 to 2378)
Walton, E.F., Podivinsky, E., Wu, R.-M., Reynolds, P.H.S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             without hydrogen cyanamide treatment Physiol. Plantarum 102, 171-178 (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids; Ericales; Actinidiaceae; Actinidia.

1 (bases 1 to 2378)

1 (bases 7, Podivinsky, E., Wu, R.-M., Reynolds, P.H.S. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New Zealand
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADU92286 2378 bp mRNA linear PIN 22-1
Actinidia deliciosa pyrroline-5-carboxylate synthetase mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Regulation of proline biosynthesis in kiwifruit buds with and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Actinidia deliciosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         U92286.1 GI:1928959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Young, L. W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Young
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Actinidia deliciosa
                                              GCTTTGCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTG
                                                                                                CATCAGGTGCTGTTGGTGTTGGCCGCCAACGGTTAAGATACCGGAAATTGGTCAACAGCA
                                                                                                                                                                                                                 CATCTGGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCA 341
                                                                                                                                                                             GAGCACTTTGTGAGCAGATTCATGAACTGAATTCTCAAGGATTTGAGGTTATTTTGGTTA
                                                                                                                                                                                                                                                                                            TTAAGGTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAG
                                                                                                                                                                                                                                                                                                                                      CAACAATGGACGCAGTCGATTCAACGCGAGCGTTCGTCAAAGGCGTGAAGCGTGTCATCA 63
                    GÉTTTGÉTGACCTCCAAAAGCCACAAATTGAACTTGATGGGAAGGCATGTGCAGCTGTTG
                                                                                                                                                                                                                                                         TCAAGGTTGGGACTGCTGTTGTCACTCGAGCTGATGGAAGACTGGCACTTGGAAGACTTG
                                                                                                                                                                                                                                                                                                                                                                         CGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="MDAVDSTRAFVKGVKRVIIKVGTAVVTRADGRLALGRLGALCEQ
IHELNSQGFEVILVTSGAVGVGRQRLRYKKLVNSSFADLOKPQIELDGKACAAVCQNG
LLALYDTLFSQLDVTSAQLLVTDNDFRDFEFRQLTTGVESLLNLKVIPIRNENDAVS
TRKAPYEDASGIFWDNDSLAALLALELKADLLVLLSDVEGLYSGPSDPOSKLHFYI
KEMFECHITGOKSRVGRGGMTAKVKAAVYAAHAGIPVVITSGYATNNIIKVLQGERI
GTLFHRDAQKMAPVGDVGARDMAVAARBSSRLCAMSPORSKILLDVADALEANEKL
IRIENEADLAAAQQAYYEKSLISRLALKSGKISSLAKSIRVLANMEEPIGHYLKGTEI
TDGLVLEKTSSPLGVLLIIFESRPDALVQIASLAIRSGNGLVLKGGKEAKRSNAILHK
VITSALTENVGFRLIGLVTSREEIFDLLKLDDVLDLVLFGSNKLVSQIKESTK, PVL
GHADGICTVYVUKSANNDMAKKVVLDAKTEDVALMMETLLVHKDLVQNGCLDELIV
ELQIKGVVIHGGPRASSLLHIPEARSLHHEYSSLACTIEIVDDVYALIDHIFHGSAH
TDSIITEDHFVAEIFLKQVDSSSVLHNASTRESDGARFGLGAEVGISTSRIHARGPVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VEGLLTTRWIARGSGQVVDGDKGIVYTHKDLTSHA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start=1
/product="pyrroline-5-carboxylate synthetase"
/protein_id="AAC14481.1"
/db_xref="GI:1928960"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /mol_type="mkNA"
/db_xref="taxon:3627"
/tissue_type="axillary bud"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     organism="Actinidia deliciosa"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                    48.4%; Score 1243.8; DB 8; Length 73.5%; Pred. No. 2.3e-312;
                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches 572; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Private Bag 3123, Hamilton,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         2378;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PLN 22-APR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                  243
                       303
                                                          401
                                                                                                                                                                                                                                                         123
                                                                                                                                                                                                                                                                                                                                                                              161
Ś
                                     밁
                                                                     Ś
                                                                                                                片
                                                                                                                                                      Ś
                                                                                                                                                                                              밁
                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                         닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                              1204
                                                                                                                                                                                                                                                                           1144
                                                                                                                                                                                                                                                                                                                 1242
                                                                                                                                                                                                                                                                                                                                                                                                                                    1024
                                                                                                                                                                                                                                                                                                                                                         1084
1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      304 GGCAAAATGGTCTATTGGCTCTATGATACATTGTTTAGTCAGCTGGATGTGACATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            402 GACAAAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAG
                                                                         AGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGA 1481
                                                                                                                AGAAGACATCATCTCCCTTGGGTGTTCTCCTGATTATTTTTTGAGTCTCGACCAGATGCGC
                                                                                                                                                                                                                                                                         TGGAAGAGCCCATTGGTCATGTTTTGAAGAGAACTGAGATTACAGATGGACTGGTCTTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGTCTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTA
                                                                                                                                                                                                                               AGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCAC
                                                                                                                                                                                                                                                                                                                 TGGAAGATCCAATCGGCCGTGTTTTAAAGAAAAACAGAGGTGGCAGATGGTCTTGTCTTAG
                                                                                                                                                                                                                                                                                                                                                                                        ATGAAGCTGATCTCGCTGCACAGCAGGCTGGCTATGAAAAGTCATTGATATCTCGTC 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAATTTTGCTTGACGTGGCTGATGCCTTAGAAGCAAATGAAAAACTGATCAGAATAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGA 1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAA 1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTTTCATCGAGATGCACAGAAATGGGCTCCAGTGGGAGATGTTGGTGCACGGGACATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAGTGGCTATGCTACGAACAATATCATAAAAGTACTTCAAGGAGAGCGTATTGGTACCC 843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGACTGCCAAAGTAAAAGCTGCTGTTTATGCAGCCCATGCTGGCATCCCTGTTGTTATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGAAAAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTA 821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAGCTGCTCTACTGGCGTTGGAAACCTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTG
                                                                                                                                                                                                                                                                                                                                                       TAGCTCTAAAGTCTGGGAAGATTTCAAGTCTTGCAAAATCAATTCGCGTGCTTGCGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGG 1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCAGTGGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCT 941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGACTGCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAA 881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGGAAATGTTTGAGGGACTGATTACTTTTGGGGACAAATCCAGGGTGGGAAGAGGGGGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGGGCCTTTATAGCGGCCCACCAAGTGATCCACAGTCAAAGTTGATCCACACTTACATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAGCAGCTCTATTAGCTTTGGAGCTAAAGGCTGACCTTCTTGTCCTTCTGAGTGATGTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCAGCACCAGGAAAGCTCCATATGAGGACGCTTCTGGTATATTCTGGGATAATGACAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAACTGTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTCAACTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTAGCACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAACTGTAGAATCACTATTGAATTTGAAGGTGATCCCCAATATTTAATGAAAATGATGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCAGCTACTCGTTACTGATAATGATTTTAGGGATCCAGAATTCAGGAAGCAACTTACTG
                                                                                                                                                                                            1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1181
                                                                                                                                                      1421
                                                                                                                                                                                                                                 1361
                                                                                                                                                                                                                                                                                                               1301
                                                                                                                                                                                                                                                                                                                                                       1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        903
                                                                                                                1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             963
                                                                                                                                                                                                                                                                           1203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   521
```

```
RESULT 15
SLU60267
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5
                                                                                                               REFERENCE
                                                                                                                                                                                     SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                       KEYWORDS
                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                               DEFINITION
     JOURNAL
                                                         TITLE
                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1804
                                                                                                                                                                                                                                                                                                                                                                                                           2104
                              asterids; lamiids; Solanales; Solanaceae; Solanum; Lycopersicon.

1 (Dases 1 to 2239)

Maggio, A., Garcia-Rios, M., Fujita, T., Bressan, R.A., Csonka, L.N.,

Joly, R.J. and Hasegawa, M.P.

Cloning and partial characterization of PRO2, a second tomato gene
encoding the enzyme involved in the first two steps of proline
                                                                                                                       Lycopersicon esculentum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Spermatophyta; Magnoliophyta; eudicotyledons; tore eudicots;
asterids; lamiids; Solanales; Solanaceae; Solanum; Lycopersicon.
                                                                                                                                                                                                                                                                                         SLU60267 2239 bp mRNA linear PLN 24-JAN-
                   biosynthesis
                                                                                                                                                                                                Lycopersicon esculentum (tomato)
                                                                                                                                                                                                                                           U60267.1 GI:1480669
                                                                                                                                                                                                                                                                            tomPRO2) mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                       TTGTGGATGGTGATAAAGGTATCGTTTACACCCATAAAGACCTTACTTCACATGCTTGA 2162
                                                                                                                                                                                                                                                                                                                                                                                                                              TIGTCGACGGAGACAAIGGAATIGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACCTGTCGGTGTTGAAGGATTGCTAACAACAAGATGGATCGCCAGAGGTAGCGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGGCTCGTTTCGGGCTAGGTGCAGAGGTTGGGATAAGTACAAGTAGGATACATGCACGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCCTTCGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGACACAAGATTCTCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACATGGGAGTGCACACACAGAGTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGTTGGTCCAAGGCTTATTGGACTTGTGACTTCTAGAGAGGAGATTCCCGATTTGCTTA 1443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTG 2141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCTACGTCAAGTTGACAGTTCTTCTGTACTTCACAATGCAAGCACAAGATTTAGTGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTCATGGCAGTGCACACTGATAGCATTATAACAGAGGACCATGAAGTCGCAGAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGGGCAAGCTCCTTGCTGCACATTCCAGAGGCACGATCACTTCATCATGAATACAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGGGCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTGCCTTGACGAGCTTATTGTAGAACTTCAAATTAAAGGTGTTGTTATACATGGTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGAC 1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATG 1661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTCGĂTGĂTGTAATTGĂTCTTGTGĂTTCCĂĂGĂGGCĂGCĂĂTĂĂACTTGTCTCTCĂĂĂ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGA 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCCAGCAGCCTGTAATGCAATGGAAACTCTCCTTGTTCACAAAGATTTGGTACAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCAAGGAATCAACGAAAATTCCTGTTCTGGGTCATGCTGATGGAATTTGCCATGTGTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGATAAGTCTGCTAATATGGATATGGCAAAGAAAGTTGTTTTGGATGCAAAAACGGATT
 PROCEEDINGS OF THE ASPP MEETING,
                                                                                                                                                                                                                                                                                                            PLN 24-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
REFERENCE
AUTHORS
TITLE
JOURNAL
                          S
                                                                       밁
                                                                                                        Ś
                                                                                                                                            밁
                                                                                                                                                                           Ś
                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                         ₽
                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 1576;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                       343
                                    466
                                                                                                                                                                                 346
                                                                                                                                                                                                                                                                                           163
                                                                                                                                                                                                                                                                                                                                                                                                     166
GCTTCTGGTGACTGATAATGACTTTAGAGATCCAGATTTTAGGAGACAACTCAATGACAC
```

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           106 AATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAA 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          43 AATGGAGACAGTTGATTCAACTCGAGCATTTGTGAAGAACGTCAAACGACTCATTGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Maggio, A., Garcia-Rios, M., Fujita, T., Bressan, R.A., Joly, R.J., Hasegwa, P.M. and Csonka, L.N.
Cloning of tomPRO1 (Accession No. U27454) and tomPRO2 (Accession No. U60267) from Lycopersicon esculentum L.: coexistence of policistronic and monocistronic genes which encode the enzymes catalyzing the first two steps of proline biosynthesis (PGR96-077) Plant Physiol. 112, 862 (1996)
3 (bases 1 to 2339)
Maggio, A., Pujita, T., Garcia-Rios, M., Bressan, R.A. and Csonka, L.N. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Horticulture Bldg., West Lafa
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Submitted (10-JUN-1996) Horticulture,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 (bases 1 to 2239)
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCTCTGTGAGCAGCTTCAGGAGCTTAATTCGCAAGGGTATGAAGTTATTTTGGTGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTTGGGACAGCAGTTGTTACTGGAAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGC
ACTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAAC 525
                                                                 AAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATC
                                                                                                                                                                                                                                                                                                                                 TGGTGCTGTAGGTGTTGGTCGTCAGCGGCTTAGATAGGAAGTTGCTCAACAGCAGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTTGGGACTGCAGTTGTGACTCGAGCTGATGGAAGATTAGCACTTGGAAGATTAGGAGC
                                                                                                                                                                                              TCTTGATCTTCAAAAGCCACAAACTGAGCTTGATGGCAAGGCTTGTGCTGCTGTGGGCCA
                                                                                                                                                                                                                                                        recegaretreagaageereagaetreaacetreateggaageetretretretretretre
                                                                                                                                                                                                                                                                                                                                                                                        regreceerregrerregeaegeaaaegeerregreareaaaarragreaaraecaeerr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GHADGICHVYVDKSADMDMAKRITVDAKIDYPAACNAMETLLVHKDLÄQNGGLNDLIV
ELQTKGVSLYGGPKASSLLMIPEARTFRHEYSSLACTVEVVEDVYAAIDHIHQHGSAH
TDSIITEDQEVAEVFLRQVDSAAVFHNASTRFSDGFRFGLGAEVGISTGRIHARGPVG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRRAPYEDSGIFWDNDSLAALLALELKADLLVLLSDVDGLYSGPPRDPDSKLIYTYI
KEIHERVITRODKSRVGRGWTAKVKAMYAAYAGIPVVITSGFATDNIIKVLHGERI
GTLFHCDANKWASIGETDAREMAVAARACSRRLQALSGVEKILQDIJADALEANERA
GTLFHCDANKWASIGETDAREMAVAARACSRRLQALSGVEKILQDIJADALEANERA
ILAEMEADVVAAQQACYEKSLISRLALNPGKISSLANGVRVLSNWDEPLGHTLKRTEI
ADGFILEKSSSPLGVVLIIFESRPDALVQIASLAVRSGNGLMLKGGKEAKRSNAILHK
VITSAIPVSVGERLIGLVTSREEIPELLKLDDVIDLVIPRGSNKLVSQIKASTKIPVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
/product="delta 1-pyrroline-5-carboxylate synthetase"
/protein_id="AAB67875.1"
/db_xref="01:1480670"
/translation="METVDSTRAFVKNVKRLIVKVGTAVVTRADGRLALGRLGALCEQ
/translation="METVDSTRAFVKNVKRLIVKVGTAVVTRADGRLALGRLGALCEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LMALYDSLFSQLDVTSAQLLVTDNDFRDPDFRRQLNDTVNSLLSLKVIPIFNENDAIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VEGLLTTKWLARGSGQIVDGDKSIVYSHKDLTQQG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene="tomPRO2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="tomPRO2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             db_xref="taxon:4081"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           organism="Lycopersicon esculentum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47.8%;
73.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 1228.6; DB 8; Pred. No. 2.2e-308;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches 579; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lafayette,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            e, Purdue University, 1165
IN 47907, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          102
                                                                     402
                                                                                                                               465
                                                                                                                                                                                                                                                               405
                                                                                                                                                                                                                                                                                                                                 282
                                                                                                                                                                                                                                                                                                                                                                                            345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            285
                                                                                                                                                                                              342
                                                                                                                                                                                                                                                                                                                                                                                                                                                             222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

8 B

Ş

밁

606 AAATACTAGAAAATCCCCTGTGGTGGTGGTGGTGGTGGTGATGGTGATGTGTGTG
1546 TGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAAGAGCTTGTTACTCAGATAAA 1605
486 423
1426 GGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGT 1485
1366 ACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGA 1425
1306 GACCTCATCACCATTAGGCGTACTTCTGATTGTTTTGAATCCCGACCTGATGCACTTGT 1365
1246 AGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAA 1305
1186 TATGACACCTGGAAAGATCTCGAAGCCTTGCAGCTTCAGTTCGTAAGCTAGCT
1126 GTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGT 1185
1066 TCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGA 1125
1006 TGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGAGAGAG
946 TCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGT 1005
886 TGGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTT 945
826 TGCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAG 885
766 AAAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGAC 825
706 TCTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCACACTTTTGTTAAAGA 765
646 TGCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGG 705
586 CACCCGAAGAGCCCCATAICAGGATICTICTGGTATITTICTGGGATAACGATAGCTTAGC 645
526 TGTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGATATTAG 585

Ş

D Q D Q D Q

1543 GGCATCAACAAAATTCCTGTTCTAGGCCATGCTGATGCAAATTTGCCATGTTGATGCAAAGTTTGATGTTAATGTTAATGTTAATGTTAATGTTAATGTTAATGTTAATGCAAAATTCCTGTTCTAAGGCCATGCTTGATGCAAAATTCGATTTATGTTAATGCAAAATTCGATTTATGCAAAATTCGATTTATGCAATTTATGCAATTTATGCAATTATTTTTTTT
H 1602 C 1725 C 1726 C 1662 C 1785 G 1782 G 1782 G 1782 A 1782 A 1782 A 1782 C 1965 C 1962 C

Search completed: March 10, 2004, 19:22:05 Job time : 9659.81 secs

, Q

용 성

Ş

유 성

중 유

뭥

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                Database :
                                                                                                                                                                                                                                                                                    Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Run on;
 IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                         N_Geneseq_29Jan04:*
1: geneseqn1980s:*
2: geneseqn1990s:*
                                                                                                                                                                                                                                                                                                                                                                        3373863 seqs, 2124099041 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-026-767-2
2571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   March 10, 2004, 09:18:05; Search time 881.898 Seconds (without alignments)
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ctgatatttatttcttacc.....tcaagatactactacttttc 2571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Copyright
                geneseqn2003bs:*
geneseqn2003cs:*
                                                                                                     geneseqn1990s:*
geneseqn2000s:*
geneseqn2001as:*
                                                    geneseqn2002s:*
geneseqn2003as:*
                                                                                    geneseqn2001bs:*
geneseqn2004s:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GenCore version 5.1.6 (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  12384.789 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                      6747726
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

				o									ი	O				•		ი	
4 .	44	43	42	41	40	39	38	37	8	ω 5	4	u	32	<u>ω</u>	30	29	28	27	26	25	24
131.6	131.6	132.6	135.8	137.2	137.2	141.6	142.2	146.6	148.4	148.4	151.8	152	154.6	154.6	154.6	156.4	156.4	158.4	161.4	166.8	169.6
5.1	5.1	5.2	5. ω	υ 	υ	5	ຫ ຫ	5.7		8	5. 9	5. 9	-	6.0	6.0	6.1	6.1	6.2	6.3	6.5	6.6
1251	1248	276	1245	110000	1254	1245	4763	1251	110000	1371	1248	1251	243072	110000	1254	7696	7696	1233	1248	110000	1470
7	σ	7	7	N	7	7	σ	7	σ	7	7	7	7	7	7	σ	N	7	7	σ	4.
ACA50629	ABN67489	ABX82575	ACA32834	AAT42063_13	ACA34403	ACA33563	ABQ70922	ACA52231	ABN71527 02	ACC61721	ACA48457	ACA51260	ACF65382	ACF67367_20	ACF69162	ABS99269	AAX13474	ACA30306	ACA36547	ABA90521 16	AAF85700
														Ĺ							
	Abn67489 S	Abx82575 C	Aca32834 P	Continuation (14 o	Aca34403 P			Aca52231 P	Continuation (3 of	Acc61721 G	Aca48457 P	Aca51260 P	Acf65382 P	Continuation (21 o			Aax13474 E	Aca30306 P	Aca36547 P	Continuation (17 o	Aaf85700 A thalian
Prokaryot	Streptoco	Corn ear-	Prokaryot	on (14 o	Prokaryot	Prokaryot	Listeria	Prokaryot	on (3 of	Gene sequ	Prokaryot	Prokaryot	Photorhab	on (21 o	Photorhab	Enterococ	Enterococ	Prokaryot	Prokaryot	on (17 o	thalian

ALIGNMENTS

```
RESULT 1
                                                                                                                                                                                                                                                   Grass; delta^1-pyrroline-5-carboxylate synthetase; P5CS; gene; 8s; proline dehydrogenase; ProDH; stress tolerance; water tolerance; ca salt stress; salinity tolerance; temperature tolerance; protoplast;
                                                                                                                                                                                                                                                                                  Thale cress delta^1-pyrroline-5-carboxylate synthetase (P5CS) cDNA.
                                                                                                                                                                                                                                                                                                                                 ABX93778 standard; cDNA; 2571 BP.
                                                                                                                                                                                                                                Arabidopsis thaliana.
                                                                                                                                                                                                                                              proline accumulation; thale cress.
                                                                                                                                                                                                                                                                                                    17-JUN-2003
                                                                                                                                                                                                                                                                                                                   ABX93778;
                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                           Location/Qualifiers 107. .2260
                                                                                                                                                                                          /product= "Thale cress P5CS"
                                                                                                                                                                                                  *tag=
```

calli;

Yoshiba Y, (HITA) HITACHI LTD.
(BICO-) BIC-ORLENTED TECHNOLOGY RES ADVANCEMENT.
(INDE-) INDEPENDENT ADMINISTRATIVE INST NAT INST.
(RIKE) RIKEN KK. GB2376236-A. 08-JUN-2001; 2001JP-00174553. 24-DEC-2001; 2001GB-00030946. 11-DEC-2002. Shinozaki K;

WPI; 2003-203644/20. P-PSDB; ABU09030.

New grass plant overexpressing a P5CS gene from rice, useful for making transgenic plants with higher levels of proline accumulating ability, and transgenic plants with higher levels of proline accumulating ability, and transpersed salinity-tolerance, drought-tolerance and low temperaturetolerance.

Claim 2; Page 29-36; 52pp; English.

```
Ş
                                                                              밁
                                                                                                          Ś
                                                                                                                                                     밁
                                                                                                                                                                                       δ
                                                                                                                                                                                                                              β.
                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             뮍
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           #66666666666668#
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 2571; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention relates to a grass plant in which a delta^1-pyrroline-5-carboxylate synthetase (P5CS) gene of rice, or a P5CS gene of Arabidopsis thaliana and the antisense gene of a proline dehydrogenase (ProDH) gene of Arabidopsis thaliana, have been introduced in tandemly connected relation to each other. A new method of the present invention is useful for the production of a transgenic rice plant with improved stress tolerance, especially for water or salt stress and low temperatures. The invention provides for transgenic plants with a higher level of proline accumulating ability. The invention also relates to a grass plant obtained by introducing a vector comprising a gene of the invention into a calli or protoplast derived from a grass plant, growing the calli or protoplast derived from a grass plant, growing the calli or protoplast to obtain a colony and regenerating a plant body from the calli or colony. This sequence represents DNA encoding the thale cress pSCS polypeptide of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 2571 BP; 698 A; 493 C; 638 G; 742 T; 0 U; 0 Other;
                                      721
                                                                            661
                                                                                                                 661
                                                                                                                                                       109
                                                                                                                                                                                           601
                                                                                                                                                                                                                              541
                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                          481
                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                   421
                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
    721
                                                                                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            +-1
                                                                                                GGAACTGAAAGCTGATCTTCTGATCTTCTGAGCGATGTTGAAGGTCTTTACACAGGCCC
                                TCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGA
                                                                        GGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTACACAGGCCC
                                                                                                                                                 ATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTT
                                                                                                                                                                                   ATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTT
                                                                                                                                                                                                                          TGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCC
                                                                                                                                                                                                                                                                                                                                CAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATĠCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCTCAGACTGAACTTGATGGGAAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGTTCCTCTCTGTGTGTGTGTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGA 120
                                                                                                                                                                                                                                                              ТGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCC
                                                                                                                                                                                                                                                                                                    CAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCT
                                                                                                                                                                                                                                                                                                                                                                             TTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                         TTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTTACTGGAAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGATATTTATTTTCTTACCTTAAATACGACGGTGCTTCACTGAGTCCGACTCAGTTAAC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGATATTTATTTTCTTACCTTAAATACGACGGTGCTTCACTGAGTCCGACTCAGTTAAC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCGTTCCTCTCTGTGTGGTTTTGGTAGACGACGACGATAATGGAGGAGCTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 2571;
100.0%; Pred. No. 0;
tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 2571;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ٥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
780
                                    780
                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                      720
                                                                                                             720
                                                                                                                                                 660
                                                                                                                                                                                                                                                                600
                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                        420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                            Ś
                                                                                        밁
                                                                                                                           Ś
                                                                                                                                                                 片
                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멎
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                    1801
                                                                                                                                                                                                                                                                                1621
                                                                                                                                                                                                                                                                                                                                                                                               1501
                                                                                                                                                                                                                                                                                                                                                                                                                                 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                 GATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTAT
                                                  TTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAGTAAGATACT
                                                                                                                                                                                       GGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGC 1740
                                                                                                                                                                 GGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGC
                                                                                                                                                                                                                                        CCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATAC
                                                                                                                                                                                                                                                                            CCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATAC 1680
                                                                                                                                                                                                                                                                                                                  TCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAATACTACAAAAAT
                                                                                                                                                                                                                                                                                                                                           TCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAAATACTACAAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                               TGGACTTGTGACTTCAAGAGAAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGA 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCGATCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGTTTTAAAGAAAACAGAGGGGGCAGAATGGTCTTGTCTTAGAGAAGACCTCATCACCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGTAGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAAACTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAAACTCAT 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCGATCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAGCTGATATGGAAGATCCAATCGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAGCTGATATGGAAGATCCAATCGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGTAGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAATTCTGCTTGATATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTGA
                                                                                                                                                                                                                                                                                                                                                                                           TGGACTTGTGACTTCAAGAGAAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAATTCTGCTTGATATTGC 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATAACCAGTGGGTATTCAGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACTGCAAAAGTCAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACTGCAAAAGTCAAAGC
                                                1860
                                                                                    1800
                                                                                                                                                               1740
                                                                                                                                                                                                                                                                                                                                                       1620
                                                                                                                                                                                                                                                                                                                  1620
                                                                                                                                                                                                                                                                                                                                                                                           1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1080
                                                                                                                                                                                                                                          1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               840
```

RESULT AAC4244 AC AAC AC AC AC AC AC AC AC AC AC AC AC AC	h & & & & & &	B & B & B & B	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$
2 2 33 34 3642463 standard; DNA; 2273 BP. 3642463; 37 38 39 39 39 39 30 30 30 30 30 30 30 30 30 30 30 30 30	2401 CTCGCTTATGTAGTGGTTTTCATTTAGGGTTAGGATTGCACCAAAAATAGGATCCACTTT 2460 [61 ATTACTTACAACGAGATGATGAGAGGAAAAGGACAAGTTGTCGACGGAGACAATGG 2	1861 GAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGA 1920

18-JUN-1999 18-JUN-1999 18-JUN-1999 18-JUN-1999 18-JUN-1999 18-JUN-1999 18-JUN-1999 18-JUN-1999 21-JUN-1999 23-JUN-1999 23-JUN-1999 23-JUN-1999 23-JUN-1999 24-JUN-1999 26-JUN-1999 27-JUN-1999 28-JUN-1999 29-JUN-1999 20-JUN-1999 20-JUN-1999 20-JUN-1999 21-JUN			<i>• • • • • • • • • • • • • • • • • • • </i>
99US-0139457P 99US-0139458P 99US-0139460P 99US-0139461P 99US-0139463P 99US-0139763P 99US-0139763P 99US-0139763P 99US-0140353P 99US-0140353P 99US-0140353P 99US-0140353P 99US-0140254P 99US-014023P 99US-0141287P 99US-0141287P 99US-0142290P 99US-0142290P 99US-0142290P 99US-0142290P 99US-0142290P 99US-0142290P 99US-0143290P 99US-0143290P 99US-0143290P 99US-0143290P 99US-0143290P 99US-0143290P	908-0139/24 908-0138540 908-0138540 908-0139187 908-0139452 908-0139453 908-0139453 908-0139459	9US-0134218 9US-0134218 9US-0134219 9US-0134219 9US-0134270 9US-0134768 9US-013514941 9US-0135135 9US-0135135 9US-0135135 9US-0135135 9US-0135135 9US-013528	JUS-0123548 JUS-0125788 JUS-0126264 JUS-01274762 JUS-0128234 JUS-01298714 JUS-0130077 JUS-0130449 JUS-0130449 JUS-0131449 JUS-0132448 JUS-0132484 JUS-0132484

```
16-JUL-1999
16-JUL-1999
19-JUL-1999
19-JUL-1999
19-JUL-1999
19-JUL-1999
19-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
20-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL-1999
21-JUL
99US-0144005P.
99US-014408EP.
99US-014433EP.
99US-014433EP.
99US-014433EP.
99US-014433EP.
99US-014433EP.
99US-01443EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508P.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014508EP.
99US-014730EP.
99US-014730EP.
99US-014730EP.
99US-014730EP.
99US-01490EP.
99US-01490EP.
99US-01490EP.
99US-01490EP.
99US-01490EP.
99US-01490EP.
99US-01490EP.
99US-01490EP.
99US-015130SP.
99US-015130SP.
99US-015130SP.
99US-01533SP.
99US-01533SP.
99US-01533SP.
99US-0154018EP.
99US-015545EP.
99US-015545EP.
99US-015545EP.
99US-015545EP.
99US-015659EP.
99US-015659EP.
99US-015659EP.
99US-015659EP.
99US-015659EP.
99US-015659EP.
99US-015659EP.
99US-015659EP.
99US-015659EP.
99US-015659EP.
99US-015659EP.
99US-015675EP.
99US-015659EP.
99US-015675EP.
99US-015675EP.
99US-015675EP.
99US-015675EP.
99US-015675EP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                          Ş
                                                                             뮍
                                                                                                       S
                                                                                                                                 밁
                                                                                                                                                               δ
                                                                                                                                                                                                  맑
                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 2259; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               06-OCT-1999

07-OCT-1999

12-OCT-1999

13-OCT-1999

13-OCT-1999

14-OCT-1999

14-OCT-1999

14-OCT-1999

14-OCT-1999

14-OCT-1999

12-OCT-1999

21-OCT-1999

21-OCT-1999

22-OCT-1999

22-OCT-1999

22-OCT-1999

22-OCT-1999

22-OCT-1999

23-OCT-1999

25-OCT-1999

26-OCT-1999

26-OCT-1999

28-OCT-1999

28-OCT-1999

28-OCT-1999

28-OCT-1999

29-OCT-1999

29-OCT-1999
                                                481
                                                                                                           421
                                                                                                                                        374
                                                                                                                                                                    361
                                                                                                                                                                                                  314
                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                               254
                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                           194
                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                   134
                                                                                                                                                                                                                                                                                                                                                                                                                 121
                     494
                                                                             434
                                                                                                                                                                                                                                                                                                                                                                                                                                              74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       _
                                                                            TTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGA 480
                                                                                                                                      TGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCT
                                                                                                                                                                                                                                                                                TGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCT
                                                                                                                                                                                                                                                                                                                       TOGTTCAOGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCGTTCCTCTCTGTGTGTGGTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        creatarrrarrrrcrraccrraacaceaceacegrecrrcacreaercceacrcaerraac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGATATTTATTTCTTACCTTAAATACGACGGTGCTTCACTGAGTCCGACTCAGTTAAC
                                   CAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCT
                                                                                                                                                                                                                   TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                     TCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCGTTCCTCTCTGTGTGTGGTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGA
                     CAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCT
                                                                                                                                                                                                      TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    87.8%; Scilarity 100.0%; P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0157865P

99US-015823P

99US-0158369P

99US-0159294P

99US-0159295P

99US-01592931P

99US-0159331P

99US-0159331P

99US-0159331P

99US-0159638P

99US-0159638P

99US-0160767P

99US-0160767P

99US-0160767P

99US-0160768P

99US-0160768P

99US-0160814P

99US-0160814P

99US-0160814P

99US-0161406P

99US-0161406P

99US-0161406P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161361P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 2258.4; ; Pred. No. 0; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ω
··
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2273;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                120
                                                   540
                                                                                                                                                                                                                                                                                                                                                                                       193
                                                                                                                                                                                                                                                                                                                                                                                                                                                 133
                      553
                                                                                                                                             433
                                                                                                                                                                        420
                                                                                                                                                                                                      373
                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                313
                                                                                                                                                                                                                                                                                               300
                                                                                                                                                                                                                                                                                                                            253
                                                                                                                                                                                                                                                                                                                                                         240
                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
```

장 유

유 성 음 성

Ś

```
1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1034
                                                                                                                                                                                                                                                                                                                                                                                                                     1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1094 CGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGTAGCTTC
                                                                                                                                                                                                                                     1501
                                                                                                                                                                                                                                                                                                                                                        1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1021 TTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATTCTGCTTGATATTGC 1080
1621 CCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATAC 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            961 TITATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAG 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     914 GAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        841 TGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          781 GATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACTGCAAAAGTCAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       734 TCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721 TCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             674 GGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTACACAGGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   614 ATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         601 ATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTT 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         554 TGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541 TGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCC 600
                                                                                         TCTTGTGATCCCAAGAGGAAGCAAGCTTGTTACTCAGATAAAAAAATACTACAAAAAT 1620
                                                                                                                                                                            TGGACTTGTGACTTCAAGAGAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGA 1573
                                                                                                                                                                                                                     TGGACTTGTGACTTCAAGAGAAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGA 1560
                                                                                                                                                                                                                                                                                                                                                        TGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAAACTCAT 1500
                                                                                                                                                                                                                                                                                                                                                                                                                 TGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCGATCAAA 1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCGATCAAA 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACT 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAGCTGATATGGAAGATCCAATCGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGAAA 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGTAGCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAATTCTGCTTGATATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAACATAGATAAAGTCCTCAGAGGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTGA 913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACTGCAAAAGTCAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTTACACAGGGCCC
                                                         TCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAAATACTACAAAAAT 1633
                                                                                                                                                                                                                                                                                               TGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAAACTCAT 1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAGCTGATATGGAAGATCCAATCGGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1273
```

용 성

5 8 5

8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

Ś

밁

```
RESULT 3
ABZ13586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ~ B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
            Harper JF, Kreps J, Wang X, Zhu T;
                                                                                               24'AUG-2000; 2000US-0227866P-
26-JAN-2001; 2001US-0264647P-
22-JUN-2001; 2001US-0300111P-
                                                                                                                                                                24-AUG-2001; 2001WO-US026685
                                                                                                                                                                                                                                                                 Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                    Arabidopsis thaliana stress regulated gene SEQ ID NO 1391
                                                                                                                                                                                                  28-FEB-2002.
                                                                                                                                                                                                                                  WO200216655-A2
                                                                                                                                                                                                                                                                                                   Arabidopsis thaliana; plant; gene; stress; transgenic; ds
                                                                                                                                                                                                                                                                                                                                                                        21-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                      ABZ13586;
                                                                                                                                                                                                                                                                                                                                                                                                                                         ABZ13586 standard; DNA; 2154 BP
                                              (SCRI ) SCRIPPS RES INST. (SYGN ) SYNGENTA PARTICIPATIONS AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1934
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1681 GGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGC 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1634 CCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2234 AATTGTTTACACCATCAGGACATTCCCATCCAAGCTTAA 2273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGA 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTACTTACAACGAGATGGATAATGAGAGGAGGAAAAGGACAAGTTGTCGACGGAGACAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGCTGCTGTTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTTCCGATTTTGGACTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAG 2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGTGCACACAC 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAGTAAGATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAGTAAGATACT 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTAT 1813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTAT 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGATATGGCAÁAGCGCATAGTTTCTGATGCAÁAGTTGGACTATCCAGCAGCCTGTAATGC 1753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTCGACGGAGACAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGTGCACACAC 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGGGTCGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGGGTCGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2220
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                          S
                                                             밁
                                                                                           S
                                                                                                                             밁
                                                                                                                                                            S
                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 2154; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cell has been exposed, comprising: (a) contacting nucleic acid representative of expressed polynucleotides in the plant cell with an array or probes representative of the plant cell genome, and (b) detecting a profile of expressed polynucleotides in the plant cell characteristic of a stress response. The method is useful in the production of transgenic plants, cells and seeds and in producing plants with increased tolerance to abiotic stress. The present sequence is that of an Arabidopsis thaliana stress regulated gene (ABZ1216-ABZ17574) used in methods of the invention. Note: The sequence data for this pattent is not represented in the printed specification but is based on sequence information supplied to Derwent by the European Patent Office
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2154 BP; 595 A; 412 C; 562 G; 585 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention relates to identifying a stress condition to which a plant cell has been exposed, comprising: (a) contacting nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 15; SEQ ID NO 1391; 577pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Identifying a stress condition to which a plant cell has been exposed and producing plants with increased tolerance to these abiotic stresses.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2002-304127/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               107
                                                                                                                                                                                                                                587
                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                   467
                                                                                                                                                                                                                                                                                                                                                                                                     301
                                                                                                                                                                                                                                                                                                                                                                                                                                      407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          227
                            767
                                                             601
                                                                                               707
                                                                                                                             541
                                                                                                                                                              647
                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                   527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA
<u>AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACT</u>
                       AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACT
                                                                                                                                                                                                                                                                  GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGC
                                                                                                                                                                                                                                                                                               GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTÂGC
                                                                                                                                                                                                                                                                                                                                                                                                    AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                         AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG
                                                                                             CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA 766
                                                                                                                               GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGT
                                                                                                                                                               GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTGAGCGATGTTGAAGGT
                                                                                                                                                                                                  ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT
                                                                                                                                                                                                                         ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT
                                                                                                                                                                                                                                                                                                                                   CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT
                                                                                                                                                                                                                                                                                                                                                                     CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83.8%; Score 2154;
100.0%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 2154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          406
                                826
                                                                                                                                                                 706
                                                                                                                                                                                                                                                                                                      586
                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                       526
                                                                                                                                                                                                                                                                                                                                                                                                                                        466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 166
                                                                660
                                                                                                                                                                                                  54
0
                                                                                                                                                                                                                                    646
                                                                                                                                                                                                                                                                    480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            286
                                                                                                                                 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                 멅
                                         5
                                                                                片
                                                                                                               δ
                                                                                                                                                   B
                                                                                                                                                                              S
                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                       용
                 1741 GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
```

	827 721	GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT 8	80
	887 781	GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT 9	0 0
	947 841	rgatgctcgtttatgggctccgatcacagattctaatc 	000
ь	901	GCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAATT 1	60
	961	ACAATCAAAGCTGAGAATGAG 1 	126 020
- - 4	1127	TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT 1	186
н н	0 1	CGTAAGCTAGCTGATATGGAA 1 	246 140
	1247 1141	GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG 1	306 200
	1307 1201	ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCCGACCTGATGCACTTGTA 1	0 0
	1367 1261	CAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG 1 	320
	1427 1321	VTCTTACACAAGÖTGATCACTGATGCAATTCCAGAGAC 	₩ 8 8
	1487 1381	ACTTGTGA ACTTGTGA	.546 .440
	1547 1441	ACTCAGAI ACTCAGAI	ப் ந
	1607 1 5 01	AATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC 1	1260 1666
	1667 1561	AAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA 1	L726 L620
-	1727 1621	GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG 1	L786 L680
	1787 1681	CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG 1	L846 L740
	1847	GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG	906

Gaps

0

346

180 286

240

120

226 60

```
RRESULT 4
ABZ14061
IID ABZ11
XX ABZ11
XX ABZ11
XX ABZ1
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX ARAB
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
XX Ider
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
The invention relates to identifying a stress condition to which a plant cell has been exposed, comprising: (a) contacting nucleic acid representative of expressed polynucleotides in the plant cell with an array or probes representative of the plant cell genome; and (b) detecting a profile of expressed polynucleotides in the plant cell characteristic of a stress response. The method is useful in the production of transgenic plants, cells and seeds and in producing plants with increased tolerance to abiotic stress. The present sequence is that of an Arabidopsis thaliana stress regulated gene (ABZ12196-ABZ17574) used in methods of the invention. Note: The sequence data for this patent is not represented in the printed specification but is based on sequence information supplied to Derwent by the European Patent Office
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-AUG-2000; 2000US-0227866P.
26-JAN-2001; 2001US-0264647P.
22-JUN-2001; 2001US-0300111P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis thaliana stress regulated gene SEQ ID NO 1866.
                                                                                                                                                                                                                                                                                                                                                                                                                      Identifying a stress condition to which a plant cell has been exposed and producing plants with increased tolerance to these abiotic stresses.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200216655-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Arabidopsis thaliana; plant; gene; stress; transgenic; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ABZ14061;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-304127/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-AUG-2001; 2001WO-US026685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABZ14061 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (SCRI ) SCRIPPS RES INST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1907
                                                                                                                                                                                                                                                                                                                                                                 11; SEQ ID NO 1866; 577pp + Sequence Listing; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT 1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTC 2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGCCAAGTGGATAGCGCTGTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGCCAAGTGGATAGCGCTGCTGTTTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGAGTGCACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Kreps J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wang X,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zhu T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        먉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           X
S
                                                                                           片
                                                                                                                                          8
                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Sin
Matches 1848;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2181 BP; 624 A; 406 C; 555 G; 596 T; 0 U; 0 Other;
     1067 CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG 1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             107 ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 587
                                                                                                                                                                                                                                                          947
                                                                                                                                                                                                                                                                                                                  781
                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 GTTGGGACTGCAGTTGTTACTGGGAAAGGTGGAAGATTGGCTCTTGGACGTTTAGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGCTTGTGACCGATAGCAGTTTTAGAGATAAGGATTTCAGGAAGCAACTTAGTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGATTTACAGAAGCCACAAATGGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTGCCGTTGGTCTTGGTCGACAAAGGCTTCGATACAGACAATTAGTCAACAGCAGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGACGGAGATCGATCGTTCACGCGCGTTCGCCAAAGACGTTAAGCGTATCGTCGTCAAG
                                                                                           GCTGCAAGGGAAAGCTCAAGAAAGCTTCAGGCCTTATCTTCAGAAGATAGGAAACAAATT
                                                                                                                                                                                                                                                                                                                                                                       GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT 946
                                                                                                                                                                                                                                                                                                                                                                                                                         GCAAAAGTTÄÄÄÄGCIGCIGTTÄÄTGCÄĞCTTÄTGGTGĞCGTTCCTGTTÄTCATAACCAGI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTCTTCTGTCGCTAGAGCTGAAAGCTGATCTTTTGATTCTTAAGTGATGTTGAGGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGT 706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTCGCAGAGCCCCCTACAAGGATTCTACTGGTATATTTTGGGATAATGACAGCTTAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTCAAAGCGATGCTGAGGATGAGGGTTATTCCAGTTTTCAATGAGAATGATGCTATAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGATTATTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCAGTCTCATGGCTTACTATGAGACTATGTTTGACCAGTTGGATGTGACGGTTGCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA
                                                                                                                                                                                                     CATCAAGATGCTCATTTATGGGCTCCGGTCGTAGATACTACTTCTCGTGACATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAACACCAGGACGAGATTACTTTTGGCGAAAAGTCCAAATTAGGACGAGGGGGTATGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCAAGTGATTCTACCTCAAAATTAATACACACATTCATTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  <u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1669.8;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    297;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 2181;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
```

586

646 480

540

600

660 766

826

720

886

780

1066

1006

840

900

526

420

466 300

```
2027
                                                                                                                                                                                                                                                                                                                                                                                                                           1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA 1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTAGATGTTGCTGCAGCACAAGAAGCTGGATATGAAGAGTCTTTGGTAGCTCGCTTAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATGACGTTATTGATCTTGTGATCCCAAGAGGCAGCAACAAGCTTGTTTCTCAAATAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAA 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATCCAATAGGCCGTGTATTAAAGAAAACTCAGGTTGCAGATGATCTTATTTTAGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGCCTGTAATGCGATGGAAACCCTTCTTGTACATAAAGATTTGGAGCAGAATGGTTTT 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTCGACGAAAATCCCAGTGCTAGGCCATGCTGATGGAATCTGTCATGTATATGTTGAT 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTCGTCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCGGAGACTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGGTATCTTCGCTTGCAATCCGGAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGAAGCCTGGGAAGATCTCAAGCCTTGCAGCTTCCGTTCGCCAGCTAGCCGAAATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCTCATCACCAATAGGTGTTCTTCTGATTGTTTTTGAATCCCGGCCTGATGCACTTGTT 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTA 1366
GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTC
                                                                                                                         CGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                     CGCCAAGTGGACAGTGCTGTTTTTCCACAATGCAAGCACAAGATTCTCTGATGGTTTT
                                                                                                                                                                                                                                            CGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC
                                                                                                                                                                                                                                                                                                        GGAAGTGCACACTGATTGCATAGTGACGGAAGATAGTGAAGTAGCAGAAATATTCCTC
                                                                                                                                                                                                                                                                                                                                                               GGGAGTGCACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                           GCCTGCACCGTTGAAATTGTAGAAGACGTATATGGTGCTATAGATCATATTCACCAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT 1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAAGTGCAAAACTGAATATTCCGGAAACAAAATCATTTCACCACGAGTACAGTTCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTCGATGATCTTATTTTTTCTGCAAACCAAAGGCGTCACTTTGTATGGTGGGCCAAGA 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGTCTGGTAAACTGGACATGGCAAAGCGCATTGTTTCCGATGCAAAGTTGGACTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG 1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1080
                                                               2040
                                                                                                                            2146
                                                                                                                                                                                     1980
                                                                                                                                                                                                                                            2086
                                                                                                                                                                                                                                                                                                        1920
                                                                                                                                                                                                                                                                                                                                                                  2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1306
      2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1380
                                                                                                                                                                                                                                                                                                                                                                                                                              1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1846
```

δ

GTTGGAGTTGAAGGATTATTGACAACAAGATGGATAATGAGAGGAAAAGGGACAAGTTGTG

2100

S Ŗ, Ś 밁 Ś В Ś 밁 Ś 밁 S 片 Ś 吊 5 용 S 망 Ś 유 5 밁 Ś 멼 Ś 밁 δ В 8 맑 Ś 밁 Ş 맑

밁

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                S
                                          밁
                                                                   ঠ
                                                                                                밁
                                                                                                                      Ś
                                                                                                                                                     밁
                                                                                                                                                                              S
                                                                                                                                                                                                        Query Match
Best Local Simi
Matches 1562;
                                                                                                                                                                                                                                                                                                     Delta-pyyroline-5-carboxylate synthetase (PSCS), catalyses the first two steps in proline production in plants. By introduction into a plant of a PSCS cDNA clone, over production of proline is incurred resulting in increased sodium chloride tolerance and drought resistance. The method may be used to enhance crop performance under conditions of salt and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Delta-pyrroline-5-carboxylate synthetase; PSCS; proline; crop; biosynthesis; metabolism; sodium chloride; salt; NaCl; drought; ds.
                                                                                                                                                                                                                                                                Sequence 2417 BP; 695 A; 445 C; 582 G; 695 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                      Claim 1; Fig 1; 17pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                   prepare transgenic drought resistant plants
                                                                                                                                                                                                                                                                                                                                                                                                                               cDNA clone encoding bifunctional enzyme for proline prodn - useful
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1994-285533/35.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Delauney AJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-SEP-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-SEP-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                06-SEP-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US5344923-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Vigna aconitifolia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Delta-pyrroline-5-carboxylate synthetase (P5CS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-APR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAQ68841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAQ68841
                                                                                                                                                                                                                                                                                           drought stress
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (OHIS ) UNIV OHIO STATE RES FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2207
                 293
                                            166
                                                                      233
                                                                                                  106
                                                                                                                           173
                                                                                                                                                                                113 GAGCTAGATCGTTCACGTGCTTTTGCCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGG 172
                                                                                                                                                       46
                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAR61135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACGGAGACAATGGAATTGTTTACACCCCATCAGGACATTCCCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATGGAGACAATGGAATCGTTTACACCCATAAGGATCTTCCTGTC 2145
GTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGAT 352
                                                                                                ACCGCGGTGGTCACTCGCGAAGAAGGAAGGTTAGCGGTTGGAAGATTGGGAGCTCTGTGC
                                                                                                                         ACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           standard; cDNA;
                                            GAGCAGATTAAGCAACTCAACTCTCTCGGATACGACATTATACTCGTCTCCTCTGGCCCC
                                                                      GAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCG 292
                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Verma DPS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9205-00953695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      92US-00953695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product= "Delta-pyyroline-5-carboxylate synthetase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag=
                                                                                                                                                       CTTCTCGGGGGTTCATGAAGGACGTGAAGCGTGTGATCATCAAAGTTGGC
                                                                                                                                                                                                                       45.0%;
72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2417
                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                         Score 1156.8;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ₽₽
                                                                                                                                                                                                           582; Indels
                                                                                                                                                                                                                                       DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          coding sequence.
                                                                                                                                                                                                                                       Length 2417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2251
                                                                                                                                                                                                             6
                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                      ď
                                                                                                     165
                                                                                                                              232
                                                                                                                                                        105
                                                                                                                                                                                                              'n
```

B

В

δ В S 밁 S

```
1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           406 GTGACGGATAACGATTTTCGAGATAAGGATTTCAGGAAGCAGCTTACTGAGACTGTGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    413 CTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        893 TCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTTGGAACCTTGTTTCATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   706 CAGAATGAAATTACTTTTGGCGACAAGTCTAGAGTGGGAAGAGGCGGAATGACTGCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       526 AAGGCTCCCTATGAGGATTCTTCTGGTATATTTTGGGATAATGATAGTTTATCTGCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      226 GTCGGTATTGGACGCCAAAGGCTACGTTTCCGTAAATTAATCAACAGCAGCTTCGCCGAC
AGCTTCÁTTGGCAATCCGAAGTGGGAATGGGCTTCTCTTGAAAGGTGGCAAAGAAGCTAA 1364
                                                            AGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCG 1431
                                                                                                                                                                                         ATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGAT 1371
                                                                                                                                                                                                                                                                AATTGGTCGAGTATTAAAACGTACCGAGCTTTCAGATGGGGCTAATTTTAGAAAAGACATC
                                                                                                                                                                                                                                                                                                                            AATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAGACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGAC 1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAĀAĀTĀĢČTĢĀTĢČČČTGĢĀĀĢČĀĀĀTĢĀĀĀĀĀĀĀTČĀGĢĀTTĢĀĀĀĀTĢĀĀĢCTĢĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGA 1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGGAATGTTCGAGAAGGCTCCAGGCGTTATCTTCAGAGGAAAGGAAACAAAATTTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAA-AAAATTCTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGCACATGAGTGGGCTCAAGTAAAAGAGGTTGATGCACGTGAGATGGCTGTTGCAGC- 944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCG 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCACCTGAGAATATCATTAATGTTCTCCAAGGACAACGTATAGGAACTCTCTTCCATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTAAAAGCTGCGGTTCATGCAGCTGAAGCTGGCATTCCTGTTGTTATTACCAGTGGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACTGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGTGGCCCTCCAAGTGACCCTCATTCAAAGCTTATTTATACATATAACAAAGAAAAAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTAGCCTTGGAGTTAAAAGCCGATCTCCTTGTTTTGTTGAGTGATGTAGAAGGTCTTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCGCTGTTGGCGCTGAAGGTTATTCCGGTGTTCAATGAGAACGATGCCGTTAGTACCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCATGGCTCTCTACGATACGCTGTTCACTCAGCTCGATGTGACATCGGCTCAGCTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTCAGAAACCCCCAACTCGAACTCGACGGCAAGGCCTGCGCCGCCGTTGGACAGAACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                ACCTGGGAAGATTGCAAGTCTTGCAAACAACATGCGAATCATTGCCAATATGGAAGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTTACTGCTGCACAAGAAGCAGGATATGAAAAATCCTTGGTGGCTAGGCTAGCTTTAAA 1124
                                                                                                                                                                                                                                                                1244
                                                                                                                                                                                                                                                                                                                                1311
                                                                                                                                                                                                                                                                                                                                                                                                1184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     345
                                                                                                                                1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              465
```

S

В

S

밁

S 밁 δ

밁

```
밁
                                   S
                                                                             밁
                                                                                                                   S
                                                                                                                                                                  В
                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                  뮍
                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                   .8
                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             . 말
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                      1905
                                                                                                                                                                                                                                                                                                                                                                                                                      1845
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1912
                                   2211 GAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2260
  GTGATAGAGGCGTTGTCTACACCCACAAAGACCTTGCAATTTAATTTTAA
                                                                                  AGTT - - GAGGATTGTTAACAACAAGATGGATACTAAAAGG - AAGGGACAAGTGGTAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGTTATCGATCTTGTGATCCCAAGAGGAAGCAACCAAGCTTGTTACTCAGATAAAAAATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAACTTATAGGACTTGTGACCTCAAGGGAAGAGATCCCTGAGCTACTTAAGTTGGATGA
                                                                                                                       GGGTCGAAGGATTACTTACAACGAGATGGATAATGAGGAGGAAAAGGACAAGTTGTCGACG
                                                                                                                                                                  TGAGACTAGGCGCAGAGGTTGGAATTAGTACAAGCAGGATTCATGCTCGAGGTCAGTAGG
                                                                                                                                                                                                            TG-GACTTGGTGCAGAGGTGGGGGTAAGCACGGCAGGATCCATGCTCGTGGTCCAGTCG
                                                                                                                                                                                                                                                                                            AGTGGATAGCGCTGCTGTGTTCCACAACGCCACAAGATTCTCAGATGGTTTCCGATT
                                                                                                                                                                                                                                                                                                                                    TGCACATÁCTGATTCGATCGTTGCTGAAGATAACGAAGTAGCTAATGTGTTTCTACGCCA
                                                                                                                                                                                                                                                                                                                                                                              TGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                      CACCGCCGAAATTGTGGATGACGTGTATGCAGCTATTGATCATATAAATCTGTATGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAGATCATTCTTGACCTTCGAACTGAAGGCGTTATATTATATGGTGGCCCTGTGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAG 1851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ĊTGCAATGCCATGGAAACACTTCTTATCCACAAGGATTTGATAGAGAAAGGTTGGCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAAACTCATTGGACTTGTGACTTCAAGAGAAGAAGATTCCTGATTTGCTTAAGCTTGATGA 1551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGATCAAATGCAATTTTGCACAAAGTAATTATCGAGGCCATACCAGATAATGTTGGTGG 1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGG 1491
                                                                                                                                                                                                                                                  AGTAGACAGTGCTGCTTTTTCACAATGCAAGCACCAGATTCAGTGATGGGGGCACGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCTCTGTTAAATATTCCACAAGCACATTCATTCATCATGAGTACAGTTCGCTGGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTG 1911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCTAACGTGGAGATGGCAAAGCGGATTGTATTAGATGCAAAAGTTGATTATCCGGCAGC 1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTAAATTCCTGTTTTAGGTCATGCTGATGGAATTTGCCATGTCTATGTTGATAAGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTAATTGATCTGGTAATTCCAAGAGGCAGTAACAAACTTGTTTCTCAGATCAAGAGTTC
      2191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1791
                                                                                                                                                                                                                                                                                                                                                                                2031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1731
                                                                                    2141
                                                                                                                                                                      2084
                                                                                                                                                                                                            2150
                                                                                                                                                                                                                                                                                                                                        1964
                                                                                                                                                                                                                                                                                                                                                                                                                        1904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1484
                                                                                                                                                                                                                                                        2024
                                                                                                                                                                                                                                                                                                2091
```

AAT77279 standard; cDNA; 2417 BP

AAT77279;

Ş

B 8

밁 Ś 뮵 Ś 밁

S 밁 Ś 밁 Š В Ş 밁 5 밁 Ş 밁 Ś

25-MAR-2003 26-SEP-1997 (revised) (first entry)

RESULT 6
AAT772
ID AAT7
XX
AC AAT7
XX
AC AAT7
XX
DT 25-M
DT 26-S
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE Delt
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
XX
DE DELT
X P5CS; clone pVAB2; bifunctional enzyme; glutamyl kinase; glutamyl semialdehyde dehydrogenase; proline biosynthesis; glutamine availability; sodium chloride tolerance; salt tolerance; drought resistance; transgenic plant; mothbean; ds. Deltal-pyrroline-5-carboxylate synthetase cDNA from mothbean

```
Ś
                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                              ş
                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 1562;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This sequence is the insert from cDNA clone pVAB2 which encodes the bifunctional enzyme deltal-pyrroline-5-carboxylate synthetase (P5CS). The P5CS enzyme catalyses both gamma-glutamyl phosphate and glutamic-gamma-semialdehyde production. Transgenic plants transformed with this cDNA overproduce proline. New roots are better protected under salt stress conditions by proline accumulation, and are an important component for overall plant adaptation to cope with drought induced stress. Such plants thus show improved salt tolerance and resistance to drought. The plants can also be engineered to express a glutamine synthetase gene to increase can also be full amine available as a substrate for the P5CS. (Updated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Vigna aconitifolia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2417 BP; 695 A; 445 C; 582 G; 695 T; 0 U;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Inducing sodium chloride tolerance and drought resistance in plants - using the Vigna aconitifolia delta-pyrroline-5-carboxylate synthetase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Delauney AJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-JUN-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17-JUN-1997.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US5639950-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (OHIS ) UNIV OHIO STATE RES FOUND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-MAR-2003 to correct PF field.)
                                                                                                                                                                                                                                                                                        166
                                                                                                                                                                                                                                                                                                                                                                                                106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        113
                            413
                                                                              286
                                                                                                                              353
                                                                                                                                                                                   226
                                                                                                                                                                                                                                      293
                                                                                                                                                                                                                                                                                                                                           233
                                                                                                                                                                                                                                                                                                                                                                                                                                                   173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW24386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                      CTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTG 472
                                                                                                                                                                                                                                                                                                                                           GAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCG
                                                                                                                                                                                                                                                                                                                                                                                                ACCGCGGTGGTCACTCGCGAAGAAGGAAGGTTAGCGGTTGGAAGATTGGGAGCTCTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                ACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGGTGGATCCTTCTCGGGGGTTCATGAAGGACGTGAAGCGTGTGATCATCAAAGTTGGC 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGG
                                                                                                                                                                                      GTCGGTATTGGACGCCAAAGGCTACGTTTCCGTAAATTAATCAACAGCAGCTTCGCCGAC
                                                                                                                                                                                                                                   GTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGAT
                                                                                                                                                                                                                                                                                        GAGCAGATTAAGCAACTCAACTCTCTCGGATACGACATTATACTCGTCTCCTCTGGCCCC
                                                                                 CTTCAGAAACCCCAACTCGAACTCGACGGCAAGGCCTGCGCCGCCGTTGGACAGAACAGT
                                                                                                                                 CTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Verma DPS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          92US-00953695.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94US-00267259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag= a /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= /*tag= 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             activities"
2268. .2274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 45.0%;
72.7%;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1156.8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . No. 0;
     DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              582;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 2417;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                         285
                                                                                                                                                                                                                                                                                                                                                                                                                                                         232
                                                                                                                                      412
                                                                                                                                                                                                                                                                                              225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ຫ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    片
           밁
                                                     Ś
                                                                                                             밁
                                                                                                                                                             Ś
                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1013
                                                             1492 ТАЛАСТСАТТЭЭАСТТЭТЭАСТТСАЛЭЛЭЛЭЛЭЛЭГЭТТЭСТТАЛЭСТТЭЛЭГЭЛ 1551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        346 CTCATGGCTCTACGATACGCTGTTCACTCAGCTCGATGTGACATCGGCTCAGCTTCTT 405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGACGGATAACGATTTTCGAGATAAGGATTTCACGAAGCAGCTTACTGAGACTGTGAAG
              AAAACTTATAGGACTTGTGACCTCAAGGGAAGAGATCCCTGAGCTACTTAAGTTGGATGA 1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTAGCCTTGGAGTTAAAAGCCGATCTCCTTGTTTTGTTGAGTGATGTAGAAGGTCTTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              creecerreeaacreaaacrearcrecrearrerrereaecearerreaacererrac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGGCTCCCTATGAGGATTCTTCTGGTATATTTTGGGATAATGATAGTTTATCTGCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTATGCTTGATTTGAGGGTTATTCCAATTTCAATGAGAATGATGCTATTAGCACCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                  AATTGGTCGAGTATTAAAACGTACCGAGCTTTCAGATGGGCTAATTTTAGAAAAGACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAGACCTC 1311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAAAATAGCTGATGCCCTGGAAGCAAATGAAAAAAATAATCAGGATTGAAAATGAAGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAA-AAAATTCTGCT 1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGCACATGAGTGGGCTCAAGTAAAAGAGGTTGATGCACGTGAGATGGCTGTTGCAGC-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATECTCETTATEGECTCCGATCACAGATTCTAATECTCGTGACATGGCAGTTGCTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCACCTGAGAATATCATTAATGTTCTCCAAGGACAACGTATAGGAACTCTCTTCCATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTAAAAGCTGCGGTTCATGCAGCTGAAGCTGGCATTCCTGTTGTTATTACCAGTGGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGAATGAAATTACTTTTGGCGACAAGTCTAGAGTGGGAAAGAGGCGGAATGACTGCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACTGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGTGGCCCTCCAAGTGACCCTCATTCAAAGCTTATTTATACATATAACAAAAGAAAAAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGCTGTTGGCGCTGAAGGTTATTCCGGTGTTCAATGAGAACGATGCCGTTAGTACCAGG
                                                                                                                                                                  GCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGG
                                                                                                                                                                                                                                                                                                                                                                                  ATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCTGGGAAGATTGCAAGTCTTGCAAACAACATGCGAATCATTGCCAATATGGAAGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGAC 1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGA 1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGGAATGTTCGAGAAGGCTCCAGGCGTTATCTTCAGAGGAAAGGAAACAAAATTTTACT
                                                                                                                                                                                                                        AGCTTCATTGGCAATCCGAAGTGGGAATGGGCTTCTCTTGAAAGGTGGCAAAGAAGCTAA
                                                                                                                                                                                                                                                                        AGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTTACTGCTGCACAAGAAGCAGGATATGAAAAATCCTTGGTGGCTAGGCTAGCTTTAAA 1124
                                                                                                                                                                                                                                                                                                                          GGGAGTGCTCCTTATTGTTTTTGAGTCACGTCCTGATGCTCTTGTACAGAT
```

1012 885

1064

1184

1244

1424

1491 1364 1431

1304

1004

952

892

825

832

765

772

525 592 465

```
RESULT 7
ABX93777
ID ABX93777
ID ABX93777
ID CARCOLOMIC ACC ABX9
XX ABS0
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Rice
XX Ri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멼
       GB2376236-A.
                                                                                                                                                                                                                                                        Oryza sativa
                                                                                                                                                                                                                                                                                                                                                         Rice; grass; delta^1-pyrroline-5-carboxylate synthetase; P5CS; gene; proline dehydrogenase; ProDH; stress tolerance; water tolerance; call salt stress; salinity tolerance; temperature tolerance; protoplast;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rice delta^1-pyrroline-5-carboxylate synthetase (P5CS) cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABX93777 standard; cDNA; 2549
                                                                                                                                                                                                                                                                                                                              proline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1672
                                                                                                                                                                                                                                                                                                                                  accumulation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGATAGAGGCGTTGTCTACACCCACAAAGACCTTGCAATTTAATTTTAA 2191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAG 1851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAA 1791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTAAAATTCCTGTTTTAGGTCATGCTGATGGAATTTGCCATGTCTATGTTGATAAGTC 1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTAATTGATCTGGTAATTCCAAGAGGCAGTAACAACTTGTTTCTCAGATCAAGAGTTC 1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTCGACG 2210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCA 2031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAGATCATTCTTGACCTTCGAACTGAAGGCGTTATATTATATGGTGGCCCTGTGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCTAACGTGGAGATGGCAAAGCGGATTGTATTAGATGCAAAAGTTGATTATCCGGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGC 1731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGTTATCGATCTTGTGATCCCAAGAGGAAGCAACCAAGCTTGTTACTCAGATAAAAAATAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAGACTAGGCGCAGAGGTTGGAATTAGTACAAGCAGGATTCATGCTCGAGGTCAGTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TG-GACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGTAGACAGTGCTGCTTTTTCACAATGCAAGCACCAGATTCAGTGATGGGGCACGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGTGGATAGCGCTGCTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACCGCCGAAATTGTGGATGACGTGTATGCAGCTATTGATCATATAAATCTGTATGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAG 1971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCTCTGTTAAATATTCCACAAGCACATTCATTTCATCATGAGTACAGTTCGCTGGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTG 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCAATGCCATGGAAACACTTCTTATCCACAAGGATTTGATAGAGAAAGGTTGGCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first
                                                                                                                                                                              Location/Qualifiers
                                                                         /product= "Rice P5CS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2024
```

```
5
                                                                          맑
                                                                                                               Ś
                                                                                                                                                       맑
                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                           片
                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 1484;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to a grass plant in which a delta^1-pyrroline-5-carboxylate synthetase (PSCS) gene of rice, or a PSCS gene of Arabidopsis thaliana and the antisense gene of a proline dehydrogenase (ProDH) gene of Arabidopsis thaliana, have been introduced in tandemly connected relation to each other. A new method of the present invention is useful for the production of a transgenic rice plant with improved stress tolerance, especially for water or salt stress and low temperatures. The invention provides for transgenic plants with a higher level of proline accumulating ability. The invention also relates to a grass plant obtained by introducing a vector comprising a gene of the invention into a calli or protoplast derived from a grass plant, growing the calli or protoplast to obtain a colony and regenerating a plant body from the calli or colony. This sequence represents DNA encoding the rice PSCS polypeptide of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New grass plant overexpressing a P5CS gene from rice, useful for making transgenic plants with higher levels of proline accumulating ability, and more improved salinity-tolerance, drought-tolerance and low temperature-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; Page 22-29; 52pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2549 BP; 719 A; 453 C; 648 G; 729 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P-PSDB; ABU09029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (HITA) HITACHI LTD.

(BICO-) BIO-ORIENTED TECHNOLOGY RES ADVANCEMENT.
(INDE-) INDEPENDENT ADMINISTRATIVE INST NAT INST
(RIKE) RIKEN KK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  08-JUN-2001; 2001JP-00174553.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24-DEC-2001; 2001GB-00030946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11-DEC-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        toierance.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yoshiba Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  107
                                                                                                                                                                                                                                            279
                                                                                                                                                                                                                                                                                    287
                                                                                                                                                                                                                                                                                                                                                                                                            159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2003-203644/20.
                                                                                                                                                                                                                                                                                                                                                                  227 CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGGACGTGAAGCGCGTCATCATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG 166
                                                                                                                                                                                                                                                                                 GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                          GTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GITGGGACAGCAGTTGTTACTGGAAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA 226
CTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACT
                                     CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT
                                                                            AGTGGACTGATGGCTCTTTACGATATGTTTAACCAACTGGATGTCTCGTCATCTCAA
                                                                                                                    AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA 466
                                                                                                                                                           GCTGATCTGCAAAAGCCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAG
                                                                                                                                                                                                GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA 406
                                                                                                                                                                                                                                            GGTGCTGTTGGAGTGGGGCGACAGCGTAGGTACCGGAAGCTTGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                             CTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCA 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Shinozaki K;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             42.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 1085.6; DB 7;
Pred. No. 8.6e-303;
0; Mismatches 664;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 2549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               158
    518
                                                                                 458
                                                                                                                                                                                                                                                338
                                                                                                                                                                                                                                                                                      346
```

```
1187
                                                                                                                                                                                                                                                           1487
                                                                                                                                                                                                                                                                                                                             1419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1239 GACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAA 1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1127 TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1059 TTĠĊTAGATGTTĠĊAGATGĊTTTGĠÁGGCAAATĠAGGATTTAATAAGGTCTGAGAATGAA 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1007 GCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATT 1066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1367 CAGATAGOTTOACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG 1426
1607 AATACTACAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   579 ACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCA 638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                699 TTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 767 AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACT 826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAAATGATGCTATTAGC 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACT 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT 1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ĠĠĠŦŦŤĠĄĂĄĄŤĊĠĠŖĠĊŔŦŦĊŦŤŔŔŖĠŤŦĊŤŦĊĄŦĠĠĠĠŖŔŖŖŖĸŦŤĠĠŦŔĊŦĊŦĊŦŤŤ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGT 878
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT 886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTTACACAGGCCCTCCAAGTGATCCTAAACTCAAAGTTGATCCACACTTTTGTTAAAGAA 766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGACTGTTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGT 706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATA 1058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT 946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAA 1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG 1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTA 1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTT 998
                                                              GATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAG 1598
                                                                                                                             GATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAA 1606
                                                                                                                                                                                                   GGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTT
                                                                                                                                                                                                                                          GCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTT
                                                                                                                                                                                                                                                                                                                                                                                         GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAA 1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACATOTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTT 1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATCCAATCGGCCGTGTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG 1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           758
                                                                                                                                                                                                       1538
                                                                                                                                                                                                                                                                                                                                    1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       938
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
     밁
                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2087
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1839 GCGCACAAAGCTCTGGGATTTCCAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1787 CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1659 AAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCA 1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1667 AAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA 1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1599 GCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGTGATATTATATTATTGAC 1658
2199 AATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAA 2246
                                                                                                         2207 GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAA 2254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCTGCACTGTTGAGTTTGATGATGTTCAATCAGCAATTGACCATATTCATCGTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGC 1778

ферентирати по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставления по предоставл
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT 1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATT 1838
                                                                                                                                                                                                                  GTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTG
                                                                                                                                                                                                                                                                                                                           GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTC 2206
                                                                                                                                                                                                                                                                                                                                                                                                                                           CGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA 2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC 2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTA 2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT 2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGCAGAGTTGATAGTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCT 2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1958
```

```
RESULT 8
AAV15744
ID AAV15744
AAV1574
AC AAV1
XX Ric
DT 05-(
XX Ric
XX Ric
XX Ric
XX Ric
XX Ric
XX Ro
XX Ro
XX Ro
XX Ro
XX DT
XX CD
FT CD
FT CD
FT CD
FT CD
XX AV
PA 2
PA AV15744
                                                                                                                                                                                                                                                                                                                                     AAV15744 standard; cDNA to mRNA; 2549 BP
                                                                                                                                                                                                                                                                                                              AAV15744;
                                                                                                                                                                                             Oryza gativa.
                                                                                                                                                                                                                                                           Rice delta-1-pyrroline-5-carboxylate synthase cDNA.
                                                                                                                                                                                                                                                                                     05-JUN-1998 (first entry)
                                                                                                       JP10057069-A.
                                                                                                                                                                                                                      moisture loss; ds.
                                                                                                                                                                                                                                  Rice; delta-1-pyrroline-5-carboxylate synthase; salt resistance;
    (HITA ) HITACHI LTD
                           22-AUG-1996; 96JP-00221465
                                                    22-AUG-1996;
                                                                            03-MAR-1998
                                                     96JP-00221465.
                                                                                                                                                        Location/Qualifiers 99. .2249
                                                                                                                               /*tag= a
/product= "delta-1-pyrroline-5-carboxylate_synthase"
```

Ś 밁 5 밁 S ğ Ş В Ś 밁 Ş 片 Ś 밁 Ś 망 δ 망 Ş 밁 Ś 뮍 S 밁 δ 밁 δ

정 유

Ş

유 양 명 양 양

Ś

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                      Ś
                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 41.3%; Score 1062.8; DB 2; Length 2549; Best Local Similarity 69.4%; Pred. No. 3.4e-296; Matches 1445; Conservative 0; Mismatches 637; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present sequence encodes rice delta-1-pyrroline-5-carboxylate synthase, which can be used to provide salt resistance and prevent moisture loss in plants, improving crop yield
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Rice delta-1-pyrroline-5-carboxylate synthase gene - useful for providing salt resistance and preventing moisture loss in plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2549 BP; 719 A; 453 C; 648 G; 729 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; Page 3-9; 9pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1998-210402/19.
P-PSDB; AAW47389.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            525
5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               353
953 GATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCG 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       173 ACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTTGGTCGTTTAGGAGCACTGTGT 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               653
                                                                       885 GAAAATCGGAGCATTCTTAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTTCACAAG 944
                                                                                                                        893 TCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAA 952
                                                                                                                                                                                                                                                                     773
                                                                                                                                                                                                                                                                                                                                                                                                                                                              645 TTGGCACTGGAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGGTTGTAT 704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          585 AAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCAGGACTG 644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        593 AGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTA 652
                                                                                                                                                                                                                                                                                                                                                                                                        ACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACAT 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTAC 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTATGCTTGATTTGAGGGTTATTCCAATTTCAATGAGAATGATGCTATTAGCACCCGA 592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAACTTCTT 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGAT 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCAGGTGCT 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCG 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCTCTGTGC 224
                                                                                                                                                                         GTGAAGGCTGCTTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGTGGGTTT
                                                                                                                                                                                                                    GTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTAT 892
                                                                                                                                                                                                                                                                                                                 CAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACTGCAAAA 832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACTGTTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAG 532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGCAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAGAGTGGA 404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTCAGAAGCCTCAGACTTGATGGGAAAGGCTTGTGCTGGTGTTGGACAAAGCAGT 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ĠŦŦĠĠAĠŦĠĠĠĠĠĠĠĠĊĠĄĊŔĠĊĠŖĊŦĬŖĠĠŦŔĊĊĠĠŖŔĠĊŦŦĠŦĊŔĸŤŔĠĊŔĠĊŦŦŦĠĊŦĠŔŦ
                                                                                                                                                                                                                                                                                                                                                                  AGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAAAAAGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGCACTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTG 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            584
                                                                                                                                                                                                                                                                                                                                                                    764
                                           5
                                                                                                 밁
                                                                                                                                             Ś
                                                                                                                                                                                           문
                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맒
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1313
                                                   2033 GTGGATAGCGCTGCTGTGTTCCACAACGCCAGACAAGATTCTCAGATGGTTTCCGATTT 2092
                                                                                                                                                                                                                                                                                               1845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1133
                                                                                                                                               1973 GCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAA 2032
                                                                                                                                                                                                  1905 ÁCTGTTGÁGTTTGÁTGÁTGATGTTCAATCAGCAÁTTGÁCCATATTCATCGTTATGGAAGT
                                                                                                                                                                                                                                                                                                                                        1853 AAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGC 1912
                                                                                                                                                                                                                                                                                                                                                                                                                                       1793 GAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAGT 1852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1725 TGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGCCTTGAC 1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1665 GCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCCAGCAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1673 TGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCC 1732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1613 ACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCT 1672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1545 GTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAGGCGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1493 AAACTCATTGGACTTGTGACTTCAAGAGAAGAGATTCCTGATTTGCTTAAGCTTGATGAC 1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1433 CGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGT 1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1365 GCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAAGCTATC 1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1253 ATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAGACCTCA 1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1185 CCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAAGACCCT 1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1073 GATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGAT 1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1005 AGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATATTGCTA 1064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1013 AGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATTCTGCTT 1072
       2025 GTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCTCGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  945 AATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTTGCCGCA 1004
                                                                                                                                                                                                                                                                                               AAAGCTCTGGGATTTCCAAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATGGCCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAAAATACT 1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ÁAACTTÁTTGGCCTTGTTÁCAACTÁGÁGÁTGÁGÁTCGCAGÁTTTGCTAAÁGCTTGATGAT 1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTTGGTGAA 1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGG 1432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATA 1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACTATAAAA 1184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACA 1192
                                                                                                                                                                                                                                            ACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGT
                                                                                                                                                                                                                                                                                                                                                                                           GACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATTGCGCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAAT 1792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGACAAATCA 1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCCCATTAGGTGTTCTCTTAATTGTTTTTTGAGTCCCGACCTGATGCCTTGGTTCAGATT 1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTTAGTTCTTGAGAAAACATCT 1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAAGCTGAT
                                                                                                    GCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTACGCAGA
```

1724

1604

2024

2084

1964

1972 1904

***************************************	NOS SERVICE CONTRACTOR OF THE PROPERTY OF THE
25-FEB-2000; 2 25-FEB-1999; 05-MAR-1999; 25-MAR-1999; 25-MAR-1999; 01-APR-1999; 06-APR-1999; 16-APR-1999; 23-APR-1999; 23-APR-1999; 23-APR-1999; 23-APR-1999; 23-APR-1999; 23-APR-1999; 24-MAY-1999; 06-MAY-1999; 06-MAY-1999; 14-MAY-1999; 15-MAY-1999; 15-MAY-1999; 15-MAY-1999; 25-	2093 2085 2145 2145 2145 2213 22205 2206 00CT-20 01dops ridiss motern tridiss motern bidops colorer bidops
99US-0121825P. 99US-0123180P. 99US-0123788P. 99US-0126748P. 99US-0126748P. 99US-0126748P. 99US-012874P. 99US-012874P. 99US-0130077P. 99US-0130040P. 99US-013040P. 99US-0131449P. 99US-0132484P. 99US-0132484P. 99US-0132484P. 99US-0132484P. 99US-0132487P. 99US-0132487P. 99US-0132487P. 99US-0132487P. 99US-0132487P. 99US-0132487P. 99US-0134478P. 99US-0134278P. 99US-0134278P. 99US-0134278P. 99US-0134278P. 99US-0134379P. 99US-0134379P. 99US-0135629P. 99US-0136392P. 99US-0136392P. 99US-0136392P. 99US-0137528P.	GGACTTGGTGCAGAGGTGGGGGTAAGCACGGCAGGATCAP
	CATGCTCGTGGTCCA
	gTCGGG 2152
קר קר קר קר קר קר קר קר קר קר קר קר קר ק	אם אים אינו אינו אינו אינו אינו אינו אינו אינו
99US-0142977P. 99US-0144542P. 99US-0144085P. 99US-0144085P. 99US-0144331P. 99US-0144333P. 99US-0144333P. 99US-0144333P. 99US-0144333P. 99US-0144332P. 99US-0144332P. 99US-0144332P. 99US-0144332P. 99US-0144332P. 99US-0144332P. 99US-0144332P. 99US-0144332P. 99US-0144332P. 99US-0144332P. 99US-014432P. 99US-01452P. 99US-01452P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145218P. 99US-0145251P. 99US-0146388P. 99US-0146388P. 99US-0147302P. 99US-0147302P. 99US-0147302P.	

μÖ	PR	PR 75	뫍	אָל אָל	PR	R K	g g	PR	另	PR	N N	PR	אַ קּק	PR	2 K	PR :	g g	PR	g PR	PR	PR PR	PR	PR R	PR	PR R	PR	묫	껉	PR	PR	g P	2 2	PR	뮍	PR	묫	PR	PR ;	g g	PR K	PR;	PR	PR	אַ אָל	PR
Query Match Best Local Simi	29-OCT-1999;	28-0CT-1999;	28-OCT-1999;	26-0CT-1999;	26-OCT-1999;	25-0CT-1999;	25-OCT-1999;	22-OCT-1999;	22-OCT-1999;	21-OCT-1999;	21-OCT-1999;	21-OCT-1999;	21-0CT-1999;	18-OCT-1999;	14-0CT-1999;	14-OCT-1999;	14-OCT-1999;	13-OCT-1999;	13-OCT-1999;	12-OCT-1999;	07-OCT-1999;	OT-		SEP-	SEP	SEP-	22-SEP-1999;	SED-	SEP-	SEP-	SEP-	AUG-	AUG-	AUG-	AUG-	AUG-	AUG-	AUG-	166	16-AUG-1999; 17-AUG-1999;	AUG-	AUG-	-AUG-	-AUG-	6-AU0
35.0%; Score 900.4; DB Similarity 86.8%; Pred. No. 2.3e-2	99US-0162142P.	99US-0161993P.	99US-0161920P.	99US-0161361P.	99US-0161359P.	99US-01614052. 99US-01614062.	99US-0161404P.	99US-0160989F.	99US-0160980P.	99US-0160815P.	99US-0160770P.	99US-0160768P.	99US-0160767P.	99US-0159584P.	99US-0159638P	99US-0159331P.	99US-0159329P.	99US-0159295P.	99US-0159293P. 99US-0159294P.	99US-0158369P.	99US-0158029P. 99US-0158232P.	99US-0157865P.	99US-0157117P. 99US-0157753P.	99US-0156596P.	99US-0155659P. 99US-0156458P.	99US-0155486P.	99US-0154779F.	99US-0154039P.	99US-0153758P. 99US-0154018P.	99US-0153070P.	99US-0151930P.	99US-0151438P.	99US-0151080P.	99US-0151065₽.	99US-0150566P. 99US-0150884P.	99US-0149930P.	99US-0149929P. 99US-0149902P.	99US-0149723P.	99US-0149426P. 99US-0149722P	99US-0149368F. 99US-0149175F.	99US-0148684P.	99US-0148341P.	99US-0148171P. 99US-0148319P.	99US-U14/493F. 99US-0147935F.	99US-0147303P. 99US-0147416P.
B 3; Length 1343; 249;																																													
																				•														<u> </u>						1		-			
B &	₹	Db	Ś	5	7	Ş	망		2	ఠ	Ş	?	đ	Ş	Ę	} !	?	ФФ	Ş)	뮹	Ş	טט	ł <i>!</i>	Ę	9	. 15	?	뮹	Ś	당	Ş	}	큣	Ş	당	Ş	ţ	글 .	Ś	뮰	á	b	. 15	Matches
TTCATGCCCGTGGTCCAGTTGGAGTTGAAGGATTATTGACAACAAGATGGATAATGAGAG	2130 TCCATGCTGGTGGTCGGGGGGGGAGGGGATTACTTACAACGAGATGGATAATGAGAG 2189	961 GATTCTCTGATGGTTTTAGGTTCGGACTTGGTGCTGAGGTGGGAATAAGCACAAGCAGGA 1020	2070 GATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGGTGGGGGGTAAGCACGGGCAGAGA 2129	OT THE CARLEST TO THE CONTRACT	3	2010 TIGCAGAGCTAFICCTICGCCAAGIGGATAGCGCIGTGTGTTCCACAACGCCAGCACAA 2069	841 ATCATATTCACCAACATGGAAGTGCACACACTGATTGCATAGTGACGGAAGATAGTGAAG		1950 ATCACATTCACCGACATGGGAGTGCACACACAGAGTGCATTGTGACAGAGGATCACGAAG 2009	781 AAGAGTACAGTTCCAAGGCCTGCACCGTTGAAATTGTAGAAGACGTATATGGTGCTATAG 840	1890 ATGAGTACTGTGCCCAAGGCTTGCACTGTTGCACTGTTGCTACTGTACTACTGTACTACTGTACTGTACTACTGTACTGTACTACTGTACTACTGTACTACTACTACTACTACTACTACTACTACTACTACTACT)	721 TGTATGGTGGGCCAAGAGCAAGTGCAAAACTGAATATTCCGGAAACAAAATCATTTCACC 780	1830 TGTATGGTGGACCAAGGGCAAGGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACC 1889			1770 ТАСАССАСАЛАГІСТСТСТВАТСАЛСТТАТТТТССТСТССАСАССАЛТССАСТЕТ 1829	601 CAAAGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTACATAAAGATT 660	1/10 CAAAGIIGGACIAICCAGCAGCAGCAGCAGCAGCAGAAAACCCIICIIGIGCAAAAAACCCIICIIGIGCAAAAAAACCAAAAAAAA		541 GTCATGTATATGTTGATAAGTCTGGTAAACTGGACATGGCAAAGCGCATTGTTTCCGATG 600	1650 GTCATGTATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCCGCATAGTTTCTGATG 1709			1590 TIGTTACTCAGATAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCT 1649	421 CTGATTTGCTCAAGCTTGATGACGTTATTGATCTTGTGATCCCAAGAGGCAGCAACAAGC 480	0 CIGATI 1 G-11 AAGC 1 104 104 104 104 104 104 104 104 104 1	2	361 CAATTCCGGAGACTGTTGGAGGTAAACTCATAGGACTTGTGACCTCAAGAGAGGGGAGATTC 420	1470 САЛТІССАGAGACTGTIGGGGGTAAACTCATIGGACTTGTGACTTCAAGAGAGAGAGATTC 1529	301 TGAAGGGTGGAAAGGAGGCTCGTCGATCAAATGCTATCTTACACAAGGTGATCACTGATG 360	1410 THE REPORT OF THE PROPERTY OF THE PROPERT	0 HOLL CHECK TO THE TANK THE THE THE TANK THE THE TANK TH	241 GROUNDATTGCACTTGTTCAGATAGCTTTGCAATCCGGAGTGGAAATGGTCTTCTGC 300	1350 GACCTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGC 1409	181 ATCTTATTTTAGAGAAGACCTCATCACCAATAGGTGTTCTTCTGATTGTTTTTGAATCCC 240	1290 GTCTTGTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTTGAATCCC 1349			1230 AGCTAGCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATG 1289	61 TGGTAGCTCGCTTAGTTATGAAGCCTGGGAAGATCTCAAGCCTTGCAGCTTCCGTTCGCC 120	1170 TGGTGGCTTGGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTA 1229	1 TTAAAGCTGAGAATGATTTAGATGTTGCTGCAGCACAAGAAGCTGGATATGAAGAGTCTT 60	, ,	991; Conservative 0; Mismatches 151; Indels 0; Gaps

```
ABX571 10
ABX571
AC ABX57
AC ABX57
AC ABX57
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC AFAD
AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             웑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                             Garcia CA,
Hurban P;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Thale cress; gene; ds; genetic manipulation; plant; biosynthesis; genetic modification; environmental stress; disease resistance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABX57016 standard; DNA; 564 BP.
              The invention relates to Arabidopsis thaliana nucleic acid sequences. The DNA sequences and the polypeptides they encode are useful for identifying homologous or related genes, for producing compositions that modulate the expression or function of the polypeptides, for mapping functional regions of the protein, in diagnosis, for studying associated physicians of the protein, in diagnosis, for studying associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26-JAN-2001; 2001US-00770152.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Arabidopsis thaliana.
                                                                                                                                                                                                                                  Novel Arabidopsis thaliana nucleic acid useful for identifying homologous or related genes, and to create genetically modified and transgenic organisms, such as plant cells and plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        27-JAN-2000; 2000US-0178503P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-APR-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana polynucleotide #368.
physiological
                                                                                                                                                                                     Claim 1; SEQ ID NO 368; 45pp; English.
                                                                                                                                                                                                                                                                                                                                                WPI; 2003-110410/10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gorlach
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (KRIC/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fungicide; insecticide; stress tolerance.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rameaka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (HAAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (MATH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (PAGE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WOES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1081 GAĀAGGGĀCĀĀGTTGTGGĀTGGĀGĀCĀĀTGGĀATCGTTTTĀCĀCCCATAĀGGATCTTCCTG 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                             gg,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DAVIS K R.
ALLEN K.
HOFFMAN N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HURBAN P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KRICKER M.
SLATER T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MATHEW A V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RAINES T M.
YU Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HAMILTON C M
PRICE J L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GORLACH J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RAMEAKA J G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WOESSNER J P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LEDFORD B L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TC 1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TC 2251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAAGGACAAGTTGTCGACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCA 2249
                                                                                                                                                                                                                                                                                                                                                                                                                       Page A, N
Kricker M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             An Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           W D.
IA C A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
  pathways, for genetic manipulation of cells,
                                                                                                                                                                                                                                                                                                                                                                                                                       Hamilton CM, P

A, Mathew AV,

ker M, Slater T,
                                                                                                                                                                                                                                                                                                                                                                                                                          Price JL, Raines TM,
Ledford BL, Woessne
, Davis KR, Allen K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Woessner
                                                                                                                                                                                                                                                                                                                                                                                                                             Yu Y;
JP, Haa
Hoffman
     preferably
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Haas WD;
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              핝
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                           S
                                                                                                                                                        맑
                                                                                                                                                                                             S
                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
밁
                                Ś
                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           plant cells, in screening assays of various plant strains to determine the strains that are capable of withstanding a particular disease or environmental stress, for enhancing or inhibiting production of biosynthetic products in plants and to create genetically modified and transgenic organisms, such as plant cells and plants. Transgenic plants are useful for introducing or improving disease resistance and stress tolerance in plants, screening biologically active agents, such as fungicides and insecticides, and for elucidating biochemical pathways. Sequences ARX56649-ARX57647 represent Arabidopsis thaliana polymucleotides of the invention. Note: The sequence data for this patent did not form part of the printed specification but was obtained in electronic format directly from USPTO at segdata.uspto.gov/sequence.html
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 564 BP; 151 A; 112 C; 139 G; 162 T; 0 U; 0 Other;
                                                                                                                                                                                                 1698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1398
                                                                                                                                                                                                                                                                                                                                                            1578 GAAGCAACAAGCTTGTTACTCAGATAAAAATACTACAAAAATCCCTGTGCTAGGTCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1278 AGGTGGCAGATGGTCTTGTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTG 1337
                                                                                                                    1758
                                                                                                                                                                                                                                                                               1638
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1338 TTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAA 1397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   183
543
                                                                             483
                                                                                                                                                           423
                                                                                                                                                                                                                                        363
                                                                                                                                                                                                                                                                                                                                                                                                     243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             558;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACGCGTCCGATGGTCTTGTCTTAGAGAGAACCTCATCACCATTAGGCGTACTTCTGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGAAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGG
ATGGAGTCACTTTGTATGGTGG
                                                                                                           TGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTATTTTTTGCTCTGCAGAGCA
                                                                                                                                                                                               тадтттстватвелаласттвенствтеслеслесствтватесватевлалессттеттв
                                                                                                                                                                                                                                        CTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCA
                                                                                                                                                                                                                                                                                                                        GAAGCAACAAGCTTGTTACTCAGATAAAAATACTACAAAAATCCCTGTGCTAGGTCATG
                                                                                                                                                                                                                                                                                                                                                                                                        GAGAAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAAACTCATTGGACTTGTGACTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAAACTCATTGGACTTGTGACTTCAA 1517
                                    ATGGAGTCACTTTGTATGGTGG
                                                                             TGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCA
                                                                                                                                                                                                                                                                               CTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCA 1697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAA 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 555.6; DB 7; Pred. No. 8.1e-150; O; Mismatches 4;
                                    1839
564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
                                                                                                                                                                                                                                                                                                                                                                 1637
                                                                                                                        1817
                                                                                                                                                               482
                                                                                                                                                                                                        1757
                                                                                                                                                                                                                                               422
                                                                                                                                                                                                                                                                                                                                                                                                                                                1577
                                                                                                                                                                                                                                                                                                                            362
                                                                                                                                                                                                                                                                                                                                                                                                          302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  62
                                                                                 542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0
```

ABX56679
ID ABX566
XX ABX56
AC ABX56
XZ 20-FE
XX 20-FE
XX Thale
KW genet
KW fungi ABX56679; ABX56679 standard; DNA; 594 BP

20-FEB-2003 (first entry)

Arabidopsis thaliana polynucleotide #31.

Thale cress; gene; ds; genetic manipulation; plant; biosynthesis; genetic modification; environmental stress; disease resistance; fungicide; insecticide; stress tolerance.

Arabidopsis thaliana

```
밁
                                             Ś
                                                                                                                                                                                                                                                                    The invention relates to Arabidopsis thaliana nucleic acid sequences. The DNA sequences and the polypeptides they encode are useful for identifying the homologous or related genes, for producing compositions that modulate the expression or function of the polypeptides, for mapping functional CC regions of the protein, in diagnosis, for studying associated physiological pathways, for genetic manipulation of cells, preferably CC plant cells, in screening assays of various plant strains to determine the strains that are capable of withstanding a particular disease or CC environmental stress, for enhancing or inhibiting production of cells products in plants and to create genetically modified and transgenic organisms, such as plant cells and plants. Transgenic plants care useful for introducing or improving disease resistance and stress CC are useful for introducing or improving disease resistance and stress CC fungicides and insecticides, and for elucidating biochemical pathways. Sequences ABX5649-ABX57647 represent Arabidopsis thaliana CC polynucleotides of the invention. Note: The sequence data for this patent CC did not form part of the printed specification but was obtained in CC electronic format directly from USPTO at sequence sove, sequence. html
                                                                                                                                        Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              04-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Novel Arabidopsis thaliana nucleic acid useful for identifying homologous or related genes, and to create genetically modified and transgenic organisms, such as plant cells and plants.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-JAN-2001; 2001US-00770152.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US2002040489-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gorlach J,
Rameaka JG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-JAN-2000; 2000US-0178503P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; SEQ ID NO 31; 45pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2003-110410/10.
                                                                                                                                                                                                                Sequence 594 BP; 158 A; 116 C; 144 G; 176 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       García CA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (KRIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (PAGE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (DAVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (RAIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ANYY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  X.Y.D.Y.
                                                   1971 дтделелелелегиет потольности при 1971 годинать при 1971 до 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 1971 годинать при 19
21 GTGCACACACTGATTGCATAGTGACTGAAGATAGTGAAGTAGCAGAAATATTCCTCCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MATHEW A V.
LEDFORD B L.
WOESSNER J P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KRICKER M.
SLATER T.
DAVIS K R.
ALLEN K.
HOFFMAN N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HURBAN P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  검
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ł
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GORLACH J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HAAS W D.
GARCIA C A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RAINES T M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HAMILTON C M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RAMEAKA J G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRICE J L
                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    An Y, Hami
, Page A, M
Kricker M,
                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hamilton CM, P
A, Mathew AV,
er M, Slater T,
                                                                                                                                        21.0%;
96.2%;
                                                                                                                0
                                                                                                                                        Score 538.8; DB 7; Length 594; Pred. No. 6e-145;
                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Price JL, Raines TM,
Ledford BL, Woessner
, Davis KR, Allen K,
                                                                                                                      22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Woessner JP, Haas WD;
                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hoffman N;
                                                                                                                      0
                                                                                                                      Gaps
         80
```

```
RESULT 12
ADD18749
ID ADD18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   뭉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
human; disease state; cytostatic; antiinflammatory; ophthalmological; antiarteriosclerotic; vulnerary; gene therapy; hypoxia-regulated condition; tumourigenesis; angiogenesis; apoptosis; inflammation; erythropolesis; glycolysis; gluconeogenesis; glucone transportation; catecholamine synthesis; tron transport; nitric oxide synthesis; cancer; ischaemic condition; reperfusion injury; retinopathy; neonatal stress; pre-eclampsia; atherosclerosis; inflammatory condition; wound healing; gene; ds.
                                                                                                                                                                                               06-MAR-2003
                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Human disease related protein DNA sequence SeqID180.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADD18749;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADD18749 standard; DNA; 3256 BP
               WPI; 2003-290046/28.
                                                                                                               23-AUG-2001;
05-OCT-2001;
                                                                                                                                                               23-AUG-2002; 2002WO-GB003892.
                                                                                                                                                                                                                               WO2003018621-A2
P-PSDB; ADD18748
                                              Kingsman SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2031 AAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGAT 2090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2091 TIGGACTIGGIGCAGAGGIGGGGGTAAGCACGGGCAGGATCCAIGCICGIGGICCAGICG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        141 TCGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      81 AAGTGGACAGTGCTGCTGTTTTCCACAATGCAAGCACAAGATTCTCTGATGGTTTTTAGGT 140
                                                                               OXFORD BIOMEDICA UK LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAAACAAGACTTC 2270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTCGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTCTTGTCATTGTAAGCTACCTACACATTTCTG 2544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGAGTGTGTGTTTGTGTATTTGGTTGAGACTTGAGGAGAGACACAGAGGAGGATGGGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAAACAAGACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTCGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATCCACTTTACCACTTAGTCTTGCTCATAAGTACGATGAAGAACATTTAATTAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GATCCACTTTACCACTTAGTCTTGCTCATAAGTACGATGAAGAACATTTAATTAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATTGAAACCCTCGCTTATGTAGTGGTTTTGATTTTAGGGTTTAGGATTGCACCAAAAATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATTGAAACCCTCGCTTATGTAGTGGTTTTGATTTAGGGTTAGGATTGCACCAAAAATAA 2450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTTGTTTCCTCTCTGCTTAGTACTCATATCCTATCATTATTATTACTACTACTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTGTTTCCTCTCTCGCTTAGTACTCATATCCTATCATTATTATTACTACTACTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTCTTGTCATTGTAAGCTACCTACACATTTCTG 594
                                                                                                                 2001GB-00020558.
2001GB-00024037.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                               White J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGTATTTGGTTGAGACTTGAGGAGAGACACAGAGGAGGATGGGCTT
                                               Ward NR,
                                                   Harris RA,
                                                   Naylor S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           560
```

S

8 B 8 B

8

밁

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멍
밁
                                8
                                                                                   뮍
                                                                                                                        Ś
                                                                                                                                                                    밁
                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 implicated in certain disease states. Compounds which modulate the proteins of the invention may have cytostatic, antiinflammatory, ophthalmological, antiarteriosclerotic or vulnerary activities. The sequences of the invention may be useful for gene therapy. The invention may be useful for diagnosing or treating a hypoxia-regulated condition, such as tumourigenesis, angiogenesis, apoptosis, inflammation, such as tumourigenesis, angiogenesis, apoptosis, inflammation, erythropoiesis, or the biological response to hypoxia conditions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         including processes such as glycolysis, gluconeogenesis, glucose transportation, catecholamine synthesis, iron transport or nitric oxide synthesis. The disease includes cancer, ischaemic conditions, reperfusion injury, retinopathy, neonatal stress, pre-eclampsia, atherosclerosis, inflammatory conditions or wound healing. The present sequence is that of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New substantially purified polypeptide, useful for diagnosing or treating a hypoxia-regulated condition, such as cancer, ischemia, reperfusion injury, retinopathy, pre-eclampsia, atherosclerosis, inflammation, or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 3256 BP; 828 A; 761 C; 832 G; 834 T; 0 U; 1 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 27; SEQ ID NO 180; 424pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  wound healing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        disease related protein encoding DNA sequence of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  invention relates to novel human genes and gene product which icated in certain disease states. Compounds which modulate the
                                                                                   1072
                                                                                                                                                                      1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    386
                                                                                                                                                                                                                                                                                                                                                                                                                                   835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     566
                                                                                                                                                                                                                860
                                                                                                                                                                                                                                                                                                      800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              964;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGCCGGAACCTCAATGGAACACTTCATGAACTCCTTAGAATGAACATTGTCCCCATTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGAAGCAACTTAATGAAACTGTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTC 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACAGCATCTGTGCTGCCCAGATTTTGGTGACCAATTTGGATTTCCATGATGAGCAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTGATGTGACGGCAGCTCAACTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTGTGCAGCTGCCGGACAGAGTGGGCTGATGGCCTTGTATGAGGCTATGTTTACCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAG 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACACAAATGATGCTGTTGTCCCCCCAGCTGAGCCCAACAGTGACCTGCAGGGGGGTTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATGAGAATGATGCTATTAGCACCCGAAGAGCCCC----ATATCAGGATTCTTCTGGT
  GCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTGAGAACATAGATAAAGTCCTC 919
                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGATTGTTCTTTCAGATGTAGAAGGCCTTTTTGACAGCCCCCCAGGTTCAGATGATGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGATTCTTCTGAGCGATGTTGAAGGTCTTTACACAGGCCCTCCAAGTGATCCTAACTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTTGGAACTGAAAGCTGATCTT
                                         GATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCC 1039
                                                                                                                                                                         TCAAGATTAGGGAGAGGGGGTATGACTGCAAAAGTCAAAGCTGCAGTCAATGCAGCTTAT
                                                                                                                                                                                                                                                                                                                                               AAGCTTATTGATATATTTTATCCCGGAGATCAGCAGTCTG---TGACATTTGGAACCAAG
                                                                                                                                                                                                                                                                                                                                                                                         АДСТТСАТССАСАСТТТТСТТАЛАСАЛАЛАСАТСАЛСАТСЯСАТТАСАТТСССССВАСАЛА 799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAGACATTGTGGAGGGGAAGAAAGTTGGT---ACCTTCTTTCAGAAGTAAAGCCTGCA
                                                                                                                             AGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACA 979
                                                                                                                                                                                                                                                          TOTAGAGTGGGAATGGGTGGCATGGAAAGCCAAGGTGAAAGCAGCCCTCTGGGGCTTTGCAA 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 358.2; DB 9;
Pred. No. 2.6e-92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches 848; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 3256;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               594
                                                                                          1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               619
                                                                                                                                                                                                                                                                                                                                                      951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   774
```

1040 TTATCTTCGGAAGACAGGAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAAT 1099 1906 1846 1726 1577 1666 1606 1546 1814 AGCAATGGAGTCACTTTGTATGGTGGACCAA-----GGGCAAGTAAGATACTGAACATA 1867 1694 1754 CTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAG 2146 2108 GTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGGGTCGAAGGATTACTT 2206 GTGTTCTGGAATGCCAGCACTCGCTTTTCTGATGGTTACCGCTTTGGACTGGAGCTGAA GTGATCACTGATGCAATTCCAGAGACTGTTGGGGGTAAACTCATTGGACTTGTGACTTCA 1516 ATCTTTGAATCTCGTCCTGACTGTCTACCCCAGGTGGCAGCTTTGGCTATCGCAAGTGGC 1545 CGAATCGCCAAAAACTTGGAACTGGAACAAGTGACTGTCCCAATTGGAGTTCTGCTGGTG 1485 GAGGIGGCAGATGGTCTTGTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATT 1336 GGTCTGCGACAGATCGCAGCCTCCTCCCAGGACAGCGTGGGACGTGTTTTGCGCCGCACC 1425 TCAGTTCGTAAGCTAGCTGATAT---GGAAGATCCAATCGGCCGTGTTTTAAAGAAAACA 1276 CGTGATGAGATCCTGTTAGCCAACAAAAAAGACTTGGAGGAGGC---AGAGGGGGAGACTT GTTACTACAATCAAAGCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTG AGGCTAGTCAGAGACTCTAAATGTGAATATCCAGCTGCCTGTAATGCTTTGGAGACTTTG сатестватвалатствтсатвтататвтетоваславесттвтватасввататвевсавав 1693 AGAGAAGAAGTTGAAGATCTTTGCCGCCTAGACAAAATGATAGATCTGATCATTCCACGT 1725 CTGACCCAGGAGGCTCTCTCAATCCATGGAGTCAAGGAGGCCGTGCAACTGGTGAATACC AATGGCTTGTTACTCAAAGGAGGGAAGGAGGCTGCACACAGCAACCGGATTCTCCACCTC 1605 GITITITGAAICCCGACCTGAIGCACITGIACAGAIAGCITCACTIGCCAICCGIAGIGGA 1396 GCAGCTCCTCTGCTGAAACGTTTAAGCCTCTCCACATCCAAATTGAACAGCCTGGCCATC 1365 GAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCT 1219 TTGGAACCTGAGCAGAGAGCAGAAATTATCCATCATCTGGCTGATCTGTTGACGGACCAG 1248 GTGGAACAGGTAAAAATTCATGCAGGCCCCAAATTTGCCTCCTATCTGACCTTCAGCCCC CACAGCGAAGGGATCTGTCACATGTATGTGGATTCCGAGGCCAGTGTTGATAAGGTCACC AATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAG 1456 GACAACGTTCAGGATGCCATTGACCACATCCACAAGTATGGCAGCTCCCCACACGGATGTC CCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTA 1927 TTAATCCACCGGGATCTGCTCAGGACACCATTATTTGACCAGATCATTGATATGCTGAGA 1965 CGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTT 1753 асасалдадаттостсатттосттваесттелтелесттатселтстветстветсссваев 1576 ŔŢĊĠŢĊĂĊĂĠĂĠĠĀĊĠĂŖĂĀĊŖĊŖĠĊĠĠĀĠŢŢĊŢŢĊĊŢĠĊŖĠĊĂĊĠŢŔĠĀĊĀĠŢĠĊĊŢĠŢ ATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCT TCCGAAGTGAAGTCACTCCGAACTGAGTATGGGGACCTGGAATTATGCATTGAAGTAGTG GGCTCTTCCCAGCTGGTCAGAGACATCCAGAAAGCTGCTAAGGGGGATTCCAGTGATGGGG 1785 1305 1905 1845 2167 2085 2025 2265 2205 2145

8 8 8 8 8 8 8 8

장 유

밁

유용

8 8 8

8 8 8 8 8 8 8

8 8 8 8

```
ARBSULT 13
ARBN990
XX
ARBN9900
XX
ARBN9900
XX
ARBN9900
XX
ARBN9900
XX
ARBN9900
XX
ARABid
XX
ARABid
XX
ARABid
XX
ARABid
XX
US2002
XX
21-FEB
XX
27-JAN
XX
27-JAN
XX
(GORL)
PA (RANYY)
PA (RANYY)
PA (RANYY)
PA (RANYY)
PA (RANYY)
PA (RANYY)
PA (RANYY)
PA (RANYY)
PA (RANYY)
PA (RANYY)
PA (RANYY)
PA (RANYY)
PA (RANYY)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (RANG)
PA (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
The invention relates to an Arabidopsis thaliana nucleic acid (I) comprising a sequence capable of hybridising under stringent conditions to a sequence selected from any one of 999 sequences (ABN98231-ABN98231), given in the specification or its fragment. A polypeptide (II) encoded by (I), a transgenic plant (III) comprising an exogenous nucleic acid or a genetically modified cell (IV) comprising an exogenous nucleic acid, is useful for screening a candidate agent for its biological effect. (I) is useful in identifying homologous or related genes, in producing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana; plant; insecticide; fungicide; transgenic; stress; disease; crop; thale cress; tolerance factor; insect; pathogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana expressed polynucleotide SEQ ID NO 844.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-AUG-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABN99076 standard; DNA; 792 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             27-JAN-2000; 2000US-0178472P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26-JAN-2001; 2001US-00770445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US2002023281-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Arabidopsis thaliana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABN99076;
                                                                                                                                                                                                                                                                                                                                                 New Arabidopsis thaliana nucleic acid for identifying homologous genes, producing compositions that modulate the expression or function of its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gorlach J,
Rameaka JG,
                                                                                                                                                                                                                                                              Claim 1; SEQ ID NO 844; 49pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                  encoded protein, and mapping functional regions of protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2002-403163/43.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Garcia CA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (ANYY/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2266 GTGGGAATCAGTACATCGAGAATCCACGCCCGGGGACCAGTAGGACTTGAGGGACTGCTT 2325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HAAS W D.
GARCIA C A.
KRICKER M.
SLATER T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MATHEW A V.
LEDFORD B L.
WOESSNER J P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DAVIS K R.
ALLEN K.
HOFFMAN N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ž
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GORLACH J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        검
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HURBAN P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PAGE A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RAMEAKA J G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RAINES T M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRICE J L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HAMILTON C M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTACTAAGTGGCTGCTGCGAGGGAAGGACCACGTGGTC 2364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTC 2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             An Y, Hami
, Page A, M
Kricker M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hamilton CM, 1
A, Mathew AV,
Fr M, Slater T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Price JL, Raines TM,
Ledford BL, Woessne:
, Davis KR, Allen K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Raines TM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Woessner JP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hoffman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Yu Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Haas WD;
```

```
compositions that modulate the expression or function of its encoded composition, mapping functional regions of the protein and in studying cassociated physiological pathways. (I) is also useful for the genetic comanipulation of cells, particularly plant cells. (I) is also useful for the genetic comanipulation of cells, particularly plant cells. (I) is also useful in screening assays of various plant strains to determine the strains that care best capable of withstanding a particular disease or environmental companies. (II) and (III) are useful for screening of biologically active agents, e.g. fungicides, insecticides, etc., for elucidating biochemical companies to prevent or treat disease. (II) are also useful in screening composite prevent or treat disease. (II) are also useful in screening composite provent or treat disease. (II) are also useful in screening composite provent or treat disease. (II) are also useful in screening composite properties are useful in improved methods of treating crops to programs to identify agents that mimic or enhance the action of tolerance (III) is useful for identifying production of a biosynthetic product in a plant. (III) is useful for identifying other mediators that may induce to a particular plant, for identifying other mediators that enhance or induce tolerance to environmental stress, for identifying factors involved in biosynthetic pathways of nutritional, commercial, or medicinal value and for identifying productions of nutritional, commercial or medicinal value and the study of genetic function and regulation, content of the sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from USPTO at segdata.uspto.gov/sequence.html?pocID=999999770445
```

Sequence 792 BP; 238 A; 167 C; 138 G; 249 T; 0 U; 0 Other;

```
Matches 395; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1776 AGAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATG 1835
                                           2196 GACAAGTTGTCGACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATC 2251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1896 ACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACA 1955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1956 ТТСАССВАСАТССВАСТССАСАСАСАСАССТССАТТСТСАСАСАССАТСАССВАЯСТТССАС
                                                                                                                                                     2136 CTCGTGGTCCAGTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                 612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         672
                                                                                                                                                                                                               492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGGGCCAAGAGCAAGTGCAAAAACTGAATATTCCGGAAAACAAAATCATTTCACCACGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGGACCAAGGAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGT 1895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAATGGTTTTCTCGATGATCTTATTTATCTCTCCAAAACCAAAGGCGTCACTTTGTATG 733
                                                                                                                                                                                                                                                                                                                      AAATATTCCTCCGCCAAGTGGACAGTGCTGCTGTTTTCCACAATGCAAGCACAAGATTCT
                                                                                                                                                                                                                                                                                                                                                                     AGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAAGATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACAGTTCCAAGGCCTGCACCGTTGAAATTGTAGAAGACGTATATGGTGCTATAGATCATA
GACAAGTTGTGGATGGAGACAATGGAATCGTTTACACCCATAAGGATCTTCCTGTC
                                                                                                                                                                                                            CTGATGGTTTTAGGTTCGGACTTGGTGCTGAGGTGGGAATAAGCACAAGCAGGATTCATG
                                                                                                                                                                                                                                                                   CAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATG 2135
                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCACCAACATGGAAGTGCACACACTGATTGCATAGTGACGGAAGATAGTGAAGTAGCAG
                                                                                                       CCAGTTGGAGTTGAAGGATTATTGACAACAAGATGGATAATGAGAGGAAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 346.4; DB 6; Length 792; Pred. No. 3.2e-89; O; Mismatches 81; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                 2195
                                                                                                                                                                                                                       433
                                                                                                                                                                                                                                                                                                                                                                                   2075
                                                                                                                                                                                                                                                                                                                                                                                                                                       553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 613
                                                                                                             373
                                                                                                                                                                                                                                                                                                                                  493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

8 8 8 8 8 8 8 8 8 8 8

RESULT 14 ABX62288

ABX62288 standard; DNA; 418 BP

S A A B

ABX62288;

정 음 정 음

닭

(first entry)

```
The invention describes an Arabidopsis thaliana nucleic acid (I). The condified cell (II) encoded by (I), transgenic plant (III) or geneticallly composition effect, by combining the candidate agent with (II) (III) or compositions that modulate of the candidate agent with (III) or compositions that modulate the expression or function of its concoded protein, for mapping functional regions of the protein, in compositions that modulate the expression or function of its concoded protein, for mapping functional regions of the protein, in composition of cells, preferably plant cells, in screening assays of compositions to determine the strains that are capable of composition of cells, preferably plant cells, in screening assays of commitment strains to determine the strains that are capable of compositions a particular disease or environmental stress, for enhancing or inhibiting production of biosynthetic product in a plant, for consigning only peptides, as probes for the detection of mank in biological samples, to generate additional copies of (I), to generate ribozymes or colligonucleotides, as single stranded DNA probes or as triple-strand consigning oligonucleotides, as such as plant cells and plants. (II) or (III) is useful for introducing or improving disease resistance and stress tolerance in plants, screening biological active agents, e.g., considering in the cells, and for elucidating biochemical pathways. (III) is useful as crops for their enhanced diseased resistance, enhanced considering biochemical pathways.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gorlach J, ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Garcia CA,
Hurban P;
                                                                                                                                                                                                                                                                                                                                                                                                             Novel Arabidopsis thaliana nucleic acid useful for identifying homologous or related genes, and to create genetically modified and transgenic organisms, such as plant cells and plants.
                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; SEQ ID NO 403; 43pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2003-110411/10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (KRIC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-JAN-2000; 2000US-0178512P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-JAN-2001; 2001US-00770423.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US2002040490-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Arabidopsis thaliana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Transgenic plant; plant; genetically modified cell; environmental stress;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana expressed sequence related polymucleotide #403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (DAVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (PAGE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GARC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (PRIC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SHOW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (RAME/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MATHEW A V.
LEDFORD B L.
WOESSNER J P.
HAAS W D.
GARCIA C A.
KRICKER M.
SLATER T.
DAVIS K R.
ALLEN K.
ALLEN K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HURBAN P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RAMEAKA J G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RAINES T M.
YU Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HAMILTON C M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GORLACH J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             creation; disease resistance; stress tolerance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            screening; insecticide screening; gene;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              An Y, Hamil
Page A, Ma
Kricker M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hamilton CM,
A, Mathew AV,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Slater T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Price JL, Ra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Davis KR, Allen K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Raines TM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Woessner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Yu Y;
; JP, Haas WD;
Hoffman N;
```

```
RESULT 15
AAC78003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ននិនិនិនិង
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       맑
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    traits of interest, for screening programs, as crops which exhibit enhanced tolerance to environmental stress, or to produce a factor. This sequence represents a nucleic acid that may correspond to naturally occurring Arabidopsis thaliana expressed sequences. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from the US patent office at was obtained in electronic format directly from the US patent office at
                                                                                                                                                                                                                       Human; cancer associated gene; cancer antigen; detection; cancer; diagnosis; cytostatic; proliferative; vulnerary; immunomodulator; antidiabetic; antiasthmatic; antirheumatic; antiarthritic; antiviral; antiantilammatory; antithyroid; antiallergic; antibacterial; cardiant; dermatological; neuroprotective; thrombolytic; coagulant; nootropic; vasotropic; antipsoriatic; antiangiogenic; gene therapy; inflammation; immune disorder; haematopoietic cell disorder; autoimmune disorder; allergic reaction; graft versus host disease; organ rejection; allergic reaction; graft versus host disease; organ rejection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 418 BP; 121 A; 84 C; 103 G; 110 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seqdata.uspto.gov/sequence.html?DocID=999909770423
                                                                                                                                                                                                                                                                                                                                                                                                           Human cancer associated gene sequence SEQ ID NO:397.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   08-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAC78003 standard; cDNA; 2507
                                   08-MAR-2000; 2000WO-US005882.
                                                                           21-SEP-2000
                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                          neurological disease; drug screening; ss.
                                                                                                                                                                                                                 haemostatic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1082
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 902 AACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             842 GCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      357;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATCTCAAGCCTTGCAGCTTCCGTTCGCCAGCTAGCCGAAATGGAAGATCCAATAGGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAGCTGATATGGAAGATCCAATCGGCC 1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGTAGCTTCT 1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTGTTAATGCAGCTTATGGTGGCGTTCCTGTTATCATAACCAGTGGATATGCAGCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCACAAGAAGCTGGATATGAAGAGTCTTTGGTAGCTCGCTTAGTTATGAAGCCTGGGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATGCCCTTGAAGTAAATGAGAAAACAATTAAAGCTGAGAATGATTTAGATGTTGCTGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCAAGAAAGCTTCAGGCCTTATCTTCAGAAGATAGGAAACAAATTCTACACGACATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATTCTGCTTGATATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTATGGGCTCCGGTCGTAGATACTACTTCTCGTGACATGGCAGTTGCTGCAAGGGAAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              <u>AATATAAGTAAAGTCCTTAGAGGACTGCGTGTTGGTACCCTGTTCCATCAAGATGCTCAT</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                               thrombolytic; cardiovascular disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 320.4;
Pred. No. 7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  쁑.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .6e-82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멾
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 418;
                                                                                                                                                                                                                   infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
```

12-MAR-1999;

99US-0124270P

```
뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                           밁
                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        antiinflammatory; antithyroid; antiallergic; antibacterial; antiviral; dermatological; neuroprotective; cardiant; thrombolytic; coagulant; coagulant; restrictive; cardiant; thrombolytic; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; coagulant; 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Sim
Matches 823;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tissues and cells the genes are expressed in. Example of activities include: cytostatic; proliferative; vulnerary; immunomodulator; antidiabetic; antiasthmatic; antirheumatic; antiarthritic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1; Page 940; 2352pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel isolated nucleic acids comprising sequences encoding peptides useful for treating or diagnosing e.g.\ cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2507 BP; 667 A; 566 C; 621 G; 645 T; 0 U; 8 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAC77607 to AAC78448 encode the human cancer associated proteins given AAB43398 to AAB44239. The proteins can have activities based on the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rosen CA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (HUMA-) HUMAN GENOME SCI INC
                                                                                1064 ATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAAT 1123
                                                                                                                                                                                                      1004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000-587533/55.
                                                                                                                                                                                                                                                           299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       644 GCTGCTCTACTGGCGTTGGAAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAA 703
                                                                                                                                                                                                                                                                                                                  944 TTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCA 1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     824 ACTGCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    764 GAAAAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62 GGCCTTTTTGACAGCCCCCCAGGTTCAGATGATGCAAAGCTTATTGATATATTTTATCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTCTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAA 763
                        ATTATCCATCATCTGGCTGATCTGTTGACGGACCAGCGTGATGAGATCCTGTTAGCCAAC 475
                                                                                                                                           GTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAA 1063
                                                                                                                                                                                                                                                              GTTGGT---ACCTTCTTTCAGAAGTAAAGCCTGCAGGCCCTACTGTTGAGCAGCAGGGGA
                                                                                                                                                                                                                                                                                                                                                                             AATGGAACCCAAAGGTGTCTGGGCACGTCATCACAGACATTGTGGAGGGGAAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTGGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAGCCAAGGTGAAAGCAGCCCTCTGGGCTTTGCAAGGTGGCACTTCTGTWGTWATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAGATCAGCAGTCTG---TGACATTTGGAACCAAGTCTAGAGTKGGAATGGGTGGCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTGCCCGACTGGCTGTGGAAATGAAAACTGATCTCTTGATTGTTCTTTCAGATGTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ruben SM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 292.4; DB 3; Pred. No. 2.4e-73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches 731; Indels 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2.4e-73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 2507;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                 .
355
                                                                                                                                           415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                298
                                                                                                                                                                                                                                                                                                                                                                                                                                     943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                    밁
                                                                                                         Ś
                                                                                                                                                                          밁
                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                         В
                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1421 AAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1361 CTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGA 1420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1244 G---AAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTA 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1124 GAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTA 1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1013 GTATGTGGATTCCGAGGCCAGTGTTGATAAGGTCACCAGGCTAGTCAGAGACTCTAAATG 1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1601 ATAAAAAATACTACAAA---AATCCCTGTGCTAGGTCATGCTGATGGAATCTGT-CATGT 1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1541 AAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAG 1600
2191 AAAAGGACAAGTTGTC 2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  833 CATGGAGTCAAGGAGGCCGTGCAACTGGTGAATACCAGAGAAGAAGTTGAAGATCTTTGC 892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            476 AAAAAAGACTTGGAGGAGGC---AGAGGGGAGACTTGCAGCTCCTCTGCTGAAACGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCACATTCACCGACATGGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGT 2010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAACAAGTGACTGTCCCAATTGGAGTTCTGCTGGTGATCTTTGAATCTCGTCCTGACTGT 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCA 1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGCCTCTCCACATCCAAATTGAACAGCCTGGCCATCGGTCTGCGACAGATCGCAGCCTCC 592
                                                                                                                                                                                                                                                                                                                                              recaeaectarrecrreeceaaeresaraececrecrererrecaeaaececeaecaea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGCCCCAAATTTGCCTCCTATCTGACCTTCAGCCCCTCCGAAGTGAAGTCACTCCGAAC 1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGG 1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCA 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTT 1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTACCCCAGGIGGCAGCTTIGGCTATCGCAAGIGGCAATGGCTTGTTACTCAAAGGAGGG 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCCAGGACAGCGTGGGACGTGTTTTGCGCCCGCACCCGAATCGCCAAAAAACTTGGAACTG 652
                                                                                                               CCATGCTCGTGGTCCAGTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGG 2190
                                                                                                                                                                          CTTTTCTGATGGTTACCGCTTTGGACTGGGAGCTGAAGTGGGAATCAGTACATCGAGAAT
                                                                                                                                                                                                                                                                                          AGCGGAGTTCTTCCTGCAGCACGTAGACAGTGCCTGTGTGTTCTGGAATGCCAGCACTCG
                                                                                                                                                                                                                                                                                                                                                                                                            CCACATCCACAAGTATGGCAGCTCCCACACGGATGTCATCGTCACAGAGGACGAAAACAC 1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAGTATGGGGACCTGGAATTATGCATTGAAGTAGTGGACAACGTTCAGGATGCCATTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGAGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGA 1950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGACCAAGG-----GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCA 1890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACACCATTATTTGACCAGATCATTGATATGCTGAGAGTGGAACAGGTAAAAATTCATGC 1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAATATCCAGCTGCCTGTAATGCTTTGGAGACTTTGTTAATCCACCGGGATCTGCTCAG 1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATCCAGAAAGCTGCTAAGGGGATTCCAGTGATGGGGCACAGCGAAGGGATCTGTGCACAT 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGCCTAGACAAAATGATAGATCTGATCATTCCACGTGGCTCTTCCCAGCTGGTCAGAGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGAGGCTGCACACAGCAACCGGATTCTCCACCTCCTGACCCAGGAGGCTCTCTCAATC
                                                       CCACGCCCGGGGACCAGTAGGACTTGAGGGACTGCTTACTACTAAGTGGCTGCTGCGAGG
                                                                                                                                                                                                                               ATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGAT
```

832 1480

1432

2070

1312

1552

9 || | || || || || || 1553 GAAGGACCACGTGGTC 1568

Search completed: March 10, 2004, 11:20:28 Job time: 889.231 secs

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Perfect score:
                                                              იი
                                                                                                                                        Ω
   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
   169.6
137.2
137.2
137.2
                                                                                                                                                                                                                                                                                                                                                                                                                                   Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                March 10, 2004, 10:29:50 ; Search time 180.077 Seconds (without alignments) 7923.149 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                  Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Issued_Patents NA:*
1: /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
2: /cgn2_6/ptodata/2/ina/5B_COMB.seq:*
3: /cgn2_6/ptodata/2/ina/6A_COMB.seq:*
4: /cgn2_6/ptodata/2/ina/6B_COMB.seq:*
5: /cgn2_6/ptodata/2/ina/ETUS_COMB.seq:*
6: /cgn2_6/ptodata/2/ina/backfIles1.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        682709 segs, 277475446 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-026-767-2
2571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 ctgatatttattttcttacc.....tcaagatactactacttttc 2571
                                                                                                                                                                                                                                               GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                  294 4
4403765 3
7 4411529 3
1164 4
1169 4
1259 4
852 4
                                                                                                       1254
28171
1278
1279
291
294
462
256
1059
1129
1139
1774
1 US-07-953-695A-1
1 US-08-267-259-1
4 US-09-543-681A-1122
4 US-09-635-587-1
4 US-09-635-90A-1
4 US-09-633-990A-1
4 US-09-633-990A-1
4 US-09-313-294A-1616
4 US-09-313-294A-1616
4 US-09-313-294A-1616
4 US-09-313-294A-4491
4 US-09-313-294A-4491
4 US-09-313-294A-6792
4 US-09-313-294A-6792
4 US-09-313-294A-6792
4 US-09-107-324A-3665
4 US-09-107-523-91A-5631
4 US-09-252-91A-5631
4 US-09-107-523-1786
6 US-09-107-532A-1786
7 US-09-107-681A-889
9 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
1 US-09-107-681A-889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SUMMARIES
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1615, Appli
Sequence 1616, Appli
Sequence 22, Appli
Sequence 2515, Appli
Sequence 2515, Appli
Sequence 3665, Appli
Sequence 5631, Appli
Sequence 5631, Appli
Sequence 5635, Appli
Sequence 5635, Appli
Sequence 573, Appli
Sequence 1786, Appli
Sequence 1786, Appli
Sequence 1786, Appli
Sequence 1786, Appli
Sequence 1373, Appli
Sequence 1373, Appli
Sequence 1373, Appli
Sequence 1373, Appli
Sequence 1373, Appli
Sequence 1373, Appli
Sequence 1373, Appli
Sequence 1372, Appli
```

IMMEDIATE SOURCE:

STRAIN: Mothbean
DEVELOPMENTAL STAGE: Root nodules

FILING DATE: 192029 CLASSIFICATION 435 PRIOR APPLICATION UNMBER: PRIOR APPLICATION DATA: APPLICATION NUMBER: APPLICATION NUMBER: FILING DATE: ATTORNEY/AGENT INFORMATION: NAME: FOSTEY, FYARK H. REGISTRATION NUMBER: UNF 2-078 TELECHOMUNICATION INFORMATION: TELEPHANE: (614) 575-2100 TELEPHANE: (614) 575-2100 TELEPHANE: (614) 575-2109 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS: LENGTH: 2417 base pairs TYPE: NUCLEIC ACID STRANDENESS: double stranded TOPOLOGY: linear MOLECULE TYPE: CDNA DESCRIPTION: Sequence encodes Pyrroline-5-carboxylate synthetase, a bifunctional PRAGMENT TYPE: N-terminus: N-MESAVDPS C-terminus:RRRGWN-C FRAGMENT TYPE: Internal Fragment:VDAREMAV ORIGINAL SOURCE: ORIGINAL SOURCE: ORIGINAL SOURCE: ORIGINAL SOURCE: MOTEDIA MOTEDIA STRAIN: MOTEDIA ACONITIFOLIA	RESULT 1 US-07-953-695A-1 VSequence 1, Application US/07953695A Patent No. 5344923 Patent No. 5344923 Patent INFORMATION: MUSTATE: VERMA, D. et al. TITLE OF INVENTION: Nucleotide Sequence Encoding For Bifunctional Enzymes For Prol NUMBER OF SEQUENCES: 1 CORRESPONDENCE ADDRESS: ADDRESSE: Kremblas, Foster, and Millard STREET: 7632 Slate Ridge Blvd. CITY: Columbus STATE: Ohio COUNTRY: USA ZIP: 43068 COMPUTER READABLE FORM: MEDIUM TYPE: Diskette, 3.5 inch, 720 Kb storage COMPUTER: Macintosh OPERATING SYSTEM: 7.0 SOFTWARE: Microsoft Word CURRENT AppliCATION NUMBER: US/07/953,695A	28 47.6 1.9 1149 4 US-09-328-355 Sequence 355, App 29 47.4 1.8 1125 2 US-08-709-874A-25 Sequence 25, Appl 30 47.4 1.8 1125 3 US-09-104-388-25 Sequence 25, Appl 47.4 1.8 1125 3 US-09-104-388-25 Sequence 25, Appl 27.4 1.8 1125 4 US-09-252-991A-5562 Sequence 25, Appl 28.4 1.6 1119 4 US-09-252-991A-5562 Sequence 5562, Appl 35 40.2 1.6 1119 4 US-09-107-532A-2997 Sequence 27, Appl 36.4 1.6 1119 4 US-09-107-532A-2997 Sequence 2997, Appl 37 40.4 1.6 1113 4 US-09-107-532A-2997 Sequence 2997, Appl 38.4 1.5 1131 4 US-09-489-039A-5885 Sequence 2997, Appl 39.2 1.5 7218 1 US-08-99416-1036 Sequence 1036, Appl 39.2 1.5 7218 1 US-08-99416-1036 Sequence 114, Appl 41 38.8 1.5 433 4 US-08-996-416-191 Sequence 116, Appl 38.8 1.5 863 3 US-08-998-416-534 Sequence 117, Appl 38.8 1.5 863 3 US-08-998-416-534 Sequence 1191, Appl 38.8 1.5 863 3 US-08-998-416-534 Sequence 287, Appl 38.8 1.5 863 3 US-08-998-416-539 Sequence 287, Appl 38.4 1.5 399 4 US-09-621-976-8976 Sequence 287, Appl 38.4 1.5 399 4 US-09-621-976-8976 Sequence 3976, Appl 38.4 1.5 399 4 US-08-294-098-39 Sequence 3976, Appl 38.4 1.5 399 4 US-08-242-098-39 Sequence 3976, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 1.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 18.5 1419 1 US-08-242-098-39 Sequence 3978, Appl 38.4 18.5 1419

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                          Ś
                                                                                                                                           B
                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                 뮍
                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                         B,
                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-07-953-695A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 1562; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LIBRARY: cDNA expression library
CLONE: cDNA clone
PUBLICATION INFORMATION:
AUTHORS: Chien-An A. Hu, Ashton J. Delauney and Desh Pal S. Verma
AUTHORS: Chien-An A. Hu, Ashton J. Delauney and Desh Pal S. Verma
TITLE: A bifunctional enzyme (deltal-pyrroline-5-carboxylate synthetase) catalyz
JOURNAL: Proceeding of the National Academy of Science USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PAGES: 9354-9358
DATE: OCT-1992
RELEVANT RESIDUES IN SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Match 45.0%;
Local Similarity 72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           226
                                                                                                                                                                                                                                                                                                                                                                                            646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  293 GTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGAT 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       233 GAACAGCTTGCGGAATTAAACTCCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCG 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     106 ACCGCGGTGGTCACTCGCGAAGAAGGAAGGTTAGCGGTTGGAAGATTGGGAGCTCTGTGC 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     113 GAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGG 172
                                                                                    893
                                                                                                                                                                                                         833
                                                                                                                                                                                                                                                                       706
                                                                                                                                                                                                                                                                                                                                                                                                                                                    713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                173 ACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGT 232
                                                                                                                                                  766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ĊŢŢĊĂĠĂĀĀĊĊĊĊĀĀĊŢĊĠĀĀĊŢĊĠĀCGĠĊĀĀĠĠĊĊŢĠĊĠĊĊĠĊĊĠŦŢĠĠĀĊĀĠĀĀCĀGĀ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGCAGATTAAGCAACTCAACTCTCGGATACGACATTATACTCGTCTCCTCTGGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTG 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         сттсаваавсстсавастваасттватвеваавсттвтвстветвтвевасаавскет
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCGGTATTGGACGCCAAAGGCTACGTTTCCGTAAATTAATCAACAGCAGCTTCGCCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGGTGGATCCTTCTCGGGGGTTCATGAAGGACGTGAAGCGTGTGATCATCAAAGTTGGC 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCATGGCTCTCTACGATACGCTGTTCACTCAGCTCGATGTGACATCGGCTCAGCTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAGCCCCATATCAGGATTCTTCTGGTATTTTTCTGGGATAACGATAGCTTAGCTTGCTCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGACGGATAACGATTTTCGAGATAAGGATTTCAGGAAGCAGCTTACTGAGACTGTGAAG
                             GCACCTGAGAATATCATTAATGTTCTCCAAGGACAACGTATAGGAACTCTCTTCCATAAA
                                                                                    TCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAA
                                                                                                                                               GTAAAAGCTGCGGTTCATGCAGCTGAAGCTGGCATTCCTGTTGTTATTACCAGTGGTTTT
                                                                                                                                                                                                         GTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTAT
                                                                                                                                                                                                                                                                       CAGAATGAAATTACTTTTGGCGACAAGTCTAGAGTGGGAAGAGGCGGAATGACTGCCAAA
                                                                                                                                                                                                                                                                                                                               CAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACTGCAAAA
                                                                                                                                                                                                                                                                                                                                                                                         AGTGGCCCTCCAAGTGACCCTCATTCAAAGCTTATTTATACATATAACAAAGAAAAAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTAGCCTTGGAGTTAAAAAGCCGATCTCCTTGTTTGTTGAGTGATGTAGAAGGTCTTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGCTCCCTATGAGGATTCTTCTGGTATATTTTGGGATAATGATAGTTTATCTGCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGCTGTTGGCGCTGAAGGTTATTCCGGTGTTCAATGAGAACGATGCCGTTAGTACCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                October
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches 582; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 1156.8; DB 1; Length 2417; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ::
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FROM position 37 to position 2049 GenBank
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           285
                                   885
                                                                                                                                                     825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                412
                                                                                                                                                                                                                                                                          765
                                                                                                                                                                                                                                                                                                                                                                                                   705
                                                                                                                                                                                                                                                                                                                                                                                                                                                          772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
S
                                                          片
                                                                                                                 8
                                                                                                                                                                                   밁
                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1605
                                                                                                                                                                                                                                                                                                           1785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1425 AAAACTTATAGGACTTGTGACCTCAAGGGAAGAGATCCCTGAGCTACTTAAGTTGGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1013 AGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAA-AAAATTCTGCT 1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 953 GATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCG 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ĠĂŢĠĊĄĊĄŢĠĄĠŢĠĠĠĊŢĊĄĄĠŢĄĄĄĄĠĠĠŢŢĠĄŢĠĊĄĊĠŢĠĄĠĄŢĠĠĊŢĠŢŢĠĊĄĠĊ-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGGAATGTTCGAGAAGGCTCCAGGCGTTATCTTCAGAGGAAAGGAAAACAAAATTTTACT 1004
      AGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATT 2091
                                                                                                                     TGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCA 2031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCTAACGTGGAGATGGCAAAGCGGATTGTATTAGATGCAAAAGTTGATTATCCGGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AACTAAAATTCCTGTTTTAGGTCATGCTGATGGAATTTGCCATGTCTATGTTGATAAGTC 1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAAACTCATTGGACTTGTGACTTCAAGAGAAGAGATTCCTGATTTGCTTAAGCTTGATGA 1551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGATCAAATGCAAITTTTGCACAAAGTAATTATCGAGGCCATACCAGATAATGTTGGTGG 1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCG 1431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCTCCTTTGGGAGTGCTCCTTATTGTTTTTGAGTCACGTCCTGATGCTCTTGTACAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGAT 1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATTGGTCGAGTATTAAAACGTACCGAGCTTTCAGATGGGCTAATTTTAGAAAAGACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAGACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCTGGGAAGATTGCAÁGTCTTGCAAACAACATGCGAÁTCATTGCCAÁTATGGAÁGATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTTACTGCTGCACAAGAAGCAGGATATGAAAAATCCTTGGTGGCTAGGCTAGCTTTAAA 1124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGAC 1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAAAATAGCTGATGCCCTGGAAGCAAATGAAAAAATAATCAGGATTGAAAATGAAGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGA
                                                                                                                                                                                                                                                CACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAG 1971
                                                                                                                                                                                                                                                                                                        TTCTCTGTTAAATATTCCACAAGCACATTCATTTCATCATGAGTACAGTTCGCTGGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                GGAGATCATTCTTGACCTTCGAACTGAAGGCGTTATATTATATGGTGGCCCTGTGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             стотдатосодтосдава сссттсттогосдата доскто в поставане с посто в поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с поставане с п
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTAATTGATCTGGTAATTCCAAGAGGCAGTAACAAACTTGTTTCTCAGATCAAGAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGCTTCATTGGCAATCCGAAGTGGGAATGGGCTTCTCTTGAAAGGTGGCAAAGAAGCTAA 1364
                                                                 TGCACATACTGATTCGATCGTTGCTGAAGATAACGAAGTAGCTAATGTGTTTCTACGCCA 1964
                                                                                                                                                                                      CACCGCCGAAATTGTGGATGACGTGTATGCAGCTATTGATCATATAAATCTGTATGGAAG 1904
                                                                                                                                                                                                                                                                                                                                                                  TAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCCAAGGCTTG 1911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGCAATGCCATGGAAACACTTCTTATCCACAAGGATTTGATAGAGAAAGGTTGGCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1611
                                                                                                                                                                                                                                                                                                                                                                                                                                       1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1244
                                                                                                                                                                                                                                                                                                                     1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1184
```

```
문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-267-259-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 1, Application US/08267259 Patent No. 5639950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patent No. 5639950
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: VERMA, D. et al
                                                                                                                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE: 29-JUN-1994
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/953
FILING DATE: 29-SEP-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
ADDRESSEE: Kremblas, Foster, and STREET: 7632 Slate Ridge Blvd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/267,259
FILING DATE: 29-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
CLONE: cDNA clone
PUBLICATION INFORMATION:
AUTHORS: Chien-An A. Hu, Ashton J. Delauney and Desh Pal S. Verma
AUTHORS: Chien-An A. Hu, Ashton J. Delauney and Desh Pal S. Verma
TITLE: A bifunctional enzyme (deltal-pyrroline-5-carboxylate synthetase) catalyz
                                                                                                                                               ent No. 5639950
FRAGMENT TYPE: N-terminus: N-MESAVDPS--
FRAGMENT TYPE: C-terminus:--RRRGWN-C
FRAGMENT TYPE: Internal Fragment:--VDAREMAV--
ORIGINAL SOURCE:
                                                                                                                                                                                                                             MOLECULE TYPE:
DESCRIPTION:
                                                                                                                                                                                                                                                                                                                                                              TELECOMMUNICATION INFORMATION:
TELEPHONE: (614) 575-2100
TELEFAX: (614) 575-2149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION:
                                                                                   IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Foster, Frank H.
REGISTRATION NUMBER: 24,
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 7632 St
CITY: Columbus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM:
                                                                                                                    STRAIN: Mothbean
                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                 TYPE: nucleic acid
                                                                                                     DEVELOPMENTAL STAGE: Root nodules
                                                                                                                                    ORGANISM:
                                                                     LIBRARY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2142 GTGATAGAGGCGTTGTCTACACCCACAAAGACCTTGCAATTTAATTTTAA 2191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2211 GAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2085 AGTT--GAGGATTGTTAACAACAAGATGGATACTAAAAGG-AAGGGACAAGTGGTAGATG 2141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2151 GGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGAAAAAGGACAAGTTGTCGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2092 TG-GACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCG 2150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 43068
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGAGACTAGGCGCAGAGGTTGGAATTAGTÁCAAGCAGGÁTTCATGCTCGAGGTCAGTAGG 2084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTAGACAGTGCTGCTGTTTTCACAATGCAAGCACCAGATTCAGTGATGGGGCACGATT 2024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ohio
                                                                                                                                                                                                                                                                                                               2417 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Macintosh
SYSTEM: 7.0
Microsoft Word
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                                                                     cDNA expression library
                                                                                                                                  Vigna aconitifolia
                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                 Sequence encodes Pyrroline-5-carboxylate synthetase, a bifunctiona
                                                                                                                                                                                                                                                    CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Diskette, 3.5 inch, 720 Kb storage
                                                                                                                                                                                                                                                                                   double stranded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Nucleotide Sequence Encoding For Bifunctional Enzymes For Pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07/953,695
                                                                                                                                                                                                                                                                                                                                                                                                                               24,560
                                                                                                                                                                                                                                                                                                                                                                                                                   URF 2-078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and Millard
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   먉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                  뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-267-259-1
                                        片
                                                                     Ś
                                                                                                        片
                                                                                                                                    S
                                                                                                                                                                       밁
                                                                                                                                                                                                     S
                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 1562; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VOLUME: 89
ISSUE: October
PAGES: 9354-9358
DATE: OCT-1992
RELEVANT RESIDUES IN SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL:
          1013 AGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAA-AAAATTCTGCT 1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  346
                                                                                                                                        893
                                                                                                                                                                         766
                                                                                                                                                                                                      833
                                                                                                                                                                                                                                      706
                                                                                                                                                                                                                                                                       773
                                                                                                                                                                                                                                                                                                      646
                                                                                                                                                                                                                                                                                                                                      713
                                                                                                                                                                                                                                                                                                                                                                       586
                                                                                                                                                                                                                                                                                                                                                                                                     653
                                                                                                                                                                                                                                                                                                                                                                                                                                    526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              h 45.0%;
Similarity 72.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Proceeding of the National Academy of Science USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1.
```

```
113 GAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGG 172
                                                                                                                                                      826 GCACCTGAGAATATCATTAATGTTCTCCAAGGACAACGTATAGGAACTCTCTTCCATAAA 885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     233 GAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCG 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               106 ACCGCGGTGGTCACTCGCGAAGAAGGAAGGTTAGCGGTTGGAAGATTGGGAGCTCTGTGC 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        173 ACAGCAGTTGTTACTGGAAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGT 232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     46 GCGGTGGATCCTTCTCGGGGGGTTCATGAAGGACGTGAAGCGTGTGATCATCAAAGTTGGC 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGAATGAAATTACTTTTGGCGACAAGTCTAGAGTGGGAAGAGGCGGAATGACTGCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACTGCAAAA 832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTAC 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTA 652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCGCTGTTGGCGCTGAAGGTTATTCCGGTGTTCAATGAGAACGATGCCGTTAGTACCAGG 525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGA 592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAG 532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTCATGGCTCTACGATACGCTGTTCACTCAGCTCGATGTGACATCGGCTCAGCTTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTCAGAAACCCCAACTCGAACTCGACGGCAAGGCCTGCGCCGCCGTTGGACAGAACAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCGGTATTGGACGCCAAAGGCTACGTTTCCGTAAATTAATCAACAGCAGCTTCGCCGAC 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGAT 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGCAGATTAAGCAACTCAACTCTCTCGGATACGACATTATACTCGTCTCCTCTGGCCCC
GATGCACATGAGTGGGCTCAAGTAAAAGAGGTTGATGCACGTGAGATGGCTGTTGCAGC- 944
                                                                     GATECTCETTTATEGECTCCGATCACAGATTCTAATECTCGTGACATGGCAGTTGCTGCG 1012
                                                                                                                                                                                                                           тсасствавалсатаваталавтсстсававвастасвтвтввалесттвттсатела 952
                                                                                                                                                                                                                                                                                                    GTAAAAGCTGCGGTTCATGCAGCTGAAGCTGGCATTCCTGTTGTTATTACCAGTGGTTTT 825
                                                                                                                                                                                                                                                                                                                                                                             GTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTAT 892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGTGGCCCTCCAAGTGACCCTCATTCAAAGCTTATTTATACATATAACAAAGAAAAAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTAGCCTTGGAGTTAAAAGCCGATCTCCTTGTTTTGTTGAGTGATGTAGAAGGTCTTTAC 645
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGGCTCCCTATGAGGATTCTTCTGGTATATTTTTGGGATAATGATAGTTTATCTGCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ĠŢĠĀĊĠĠĀŢĀĀĊĠĀŤŤŢĊĠĀĠĀŢĀĀĠĠĀŤŢŢĊĀĠĠĀĀĠĊĀĠĊŢŢĀĊŢĠĀĠĀĊŢĠŢĠĀĀĠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTG 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1156.8; DB 1; Length 2417; 
Pred. No. 0; 
0; Mismatches 582; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FROM position 37 to position 2049 GenBank N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         705
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ຫ
```

5 g 5

밁

```
1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1732 СТGТААТGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAA 1791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1612 TACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1072 TGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGA
                                                                                                     1965 AGTAGACAGTGCTGCTTTTTCACAATGCAAGCACCAGATTCAGTGATGGGGCACGATT
                                                                                                                                                                                                                                                                                                                  1972
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1912 CACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1785 TTCTCTGTTAAATATTCCACAAGCACATTCATTTCATCATGAGTACAGTTCGCTGGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1792 TGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             945
                                 2092 TG-GACTTGGTGCAGAGGTGGGGGTAAGCACGGCCAGGATCCATGCTCGTGGTCCAGTCG 2150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAACTTATAGGACTTGTGACCTCAAGGGAAGAGATCCCTGAGCTACTTAAGTTGGATGA 1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACTAAAATTCCTGTTTTAGGTCATGCTGATGGAATTTGCCATGTCTATGTTGATAAGTC 1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAAATAC 1611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ĠĊĠĂŦĊĀĀĀŦĠĊĀĀŦŦŦŦĠĊĀĊĀĀĀĢŦĀĀŦŦĀŦCĠĀĠĠĊCĀŦĀĊĊĀĠĀŦĀĀŦĠŦŦĠGTĠG 1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGG 1491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCG 1431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATTGGTCGAGTATTÄÄAACGTÄCCGÄĞCTTTCÄGATGGGCTAATTTTÄGAAAAGACATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAAAATAGCTGATGCCCTGGAAGCAAATGAAAAATAATCAGGATTGAAAATGAAGCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGGAATGTTCGAGAAGGCTCCAGGCGTTATCTTCAGAGGAAAGGAAACAAAATTTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGCTAACGTGGAGATGGCAAAGCGGATTGTATTAGATGCAAAAGTTGATTATCCGGCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTAATTGATCTGGTAATTCCAAGAGGCAGTAACAAACTTGTTTCTCAGATCAAGAGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAAACTCATTGGACTTGTGACTTCAAGAGAAGAGTTCCTGATTTGCTTAAGCTTGATGA 1551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCTCCTTTGGGAGTGCTCCTTATTGTTTTTGAGTCACGTCCTGATGCTCTTGTACAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAGACCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCTGGGAAGATTGCAAGTCTTGCAAACAACATGCGAATCATTGCCAATATGGAAGATCC
                                                                                                                                                                        AGTGGATAGCGCTGCTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATT 2091
                                                                                                                                                                                                                                                   TGCACATACTGATTCGATCGTTGCTGAAGATAACGAAGTAGCTAATGTGTTTCTACGCCA
                                                                                                                                                                                                                                                                                                               TGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCA 2031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAGATCATTCTTGACCTTCGAACTGAAGGCGTTATATTATATGGTGGCCCTGTGGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGC 1731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTTACTGCTGCACAAGAAGCAGGATATGAAAAATCCTTGGTGGCTAGGCTAGCTTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGAC 1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGCAATGCCATGGAAACACTTCTTATCCACAAGGATTTGATAGAGAAAGGTTGGCTTAA
TCATTGGCAATCCGAAGTGGGAATGGGCTTCTCTTGAAAGGTGGCAAAGAAGCTAA 1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1724
                                                                                                                                                                                                                                                      1964
                                                                                                                                                                                                                                                                                                                                                                                         1904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1971
```

5 B 5

밁

정 음 성 음 성 음

밁

8 8 8 8 8 8 8

성 유

```
APPLICANT: GARY BRETON
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PROTEUS MIRABII
TITLE OF INVENTION: DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 2709.1002-001
CURRENT APPLICATION NUMBER: US/09/543,681A
CURRENT APPLICATION NUMBER: US/09/543,681A
CURRENT FILING DATE: 2000-04-05
PRIOR APPLICATION NUMBER: US 60/128,706
PRIOR FILING DATE: 1999-04-09
NUMBER OF SEQ ID NOS: 8344
SEQ ID NO 1122
TENGTH: 1281
CRGANISM: Proteus mirabilis
US-09-543-681A-1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       망
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 3
US-09-543-681A-1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                             Ś
                                                                            멅
                                                                                                                         Ś
                                                                                                                                                                            문
                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                          Ŗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1122, Application US/09543681A Patent No. 6605709 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 588; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                        1356 ATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGG 1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2142 GTGATAGAGGCGTTGTCTACACCCACAAAGACCTTGCAATTTAATTTTAA 2191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2211 GAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2025 TGAGACTAGGCGCAGAGGTTGGAATTAGTACAAGCAGGATTCATGCTCGAGGTCAGTAGG 2084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1176 CTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAG 1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1527 TTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGAGGAAGCAACA 1586
                                                                                                                            1474 ----TCCAGAGACTGTTGGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAAGAGA 1526
                                                                                                                                                                                                                           1416 GIGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAAT-- 1473
                                                                                                                                                                                                                                                                                                                                                                                                                          1296 TCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTG 1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1236 CTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTG 1295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1056 GGAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAG
                                                                                                                                                                                                                                                                                                                                                                             338 GTŤTÄGĀACGCCGCCGĀGTCCCTŤTĀĠĠĠĠŤTGŤTGGCGŤŤAŤŤŤACĠĀĀGČTČĠTČČAA 397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              218 ATCGTTTATTACTCACATCAGAACGTTTAAAAGCGATCGCTGATGATGTTCGCCAAGTTT 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            996 ACATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACA 1055
                                                                               518 AAACATGTGCTATTCCTGCGGCTGCTATTCAAGCTATCGATAAGCCAGATCGCGAATTAG 577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98 AAAATCAGGCACTGTTAGTCATCGCTGATTTATTAGAACAGCAAGAAGCCATTATTCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               38 AAATGGGAAAAGCGGCGCGAGAAGCTTCTTGGCACTTAGCTCAGCTATCAACCGAACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGTT--GAGGATTGTTAACAACAAGATGGATACTAAAAGG-AAGGGACAAGTGGTAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAGGGACAAGTTGTCGACG 2210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCATCTAGAAGATCCTGTAGGTCAAGTGATAGATGGTCGTTTATTAGACAGTGGCTTAC 337
                                                                                                                                                                              ATGTGACTATAGATGTAGCATCTTTATGCCTAAAAACAGGGAATGCGGCTATTCTCCGTG 457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGCTAATGAAAAAGATATGGTGGCGGCACGAGAGTCTAATATTAATGCTGCAATGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    7.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 182.2; DB 4; Length 1281; Pred. No. 1.1e-46; 0; Mismatches 598; Indels 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2141
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         仔
                                                                                                            US-09-635-587-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-635-587-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: HITACHI,
TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1, Application US/09635587 Patent No. 6429307
Query Match 6.6%; Score 169.6; DB 4; Length 1470; Best Local Similarity 97.7%; Pred. No. 1.1e-42; Matches 172; Conservative 0; Mismatches 4; Indels 0;
                                                                                                                                                                                                                                                                                                                           SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION NUMBER: US/09/635,587
CURRENT FILING DATE: 2000-08-09
                                                                                                                                                                                                                                                                                                                                                                                                                                  FILE REFERENCE:
                                                                                                                               NAME/KEY: promoter
DATABASE ACCESSION NUMBER: AB022784
DATABASE ENTRY DATE: 1999-01-28
                                                                                                                                                                                                                     ORGANISM: Arabidopsis thaliana FEATURE:
                                                                                                                                                                                                                                                                     TYPE: DNA
                                                                                                                                                                                                                                                                                               ENGTH: 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1238 CCTATAAATGGAT 1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2169 CAACGAGATGGAT 2181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1178 TAGCGGTGAGTACACAAAAGCTACATGCACGAGGCCCTATGGGATTAGATGCTCTAACCA 1237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2109 rececernaceaccacearccarecrecrecrecreserceaerceaacearractra 2168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1118 TATATGTGAATGCTAGCACGTTTTACAGATGGTGGACAGTTTGGCTTAGGTGCTGAAG 1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1058 TTTTAACGCAATCTATCAGTCATGCTGATCGCTTTGTACGCCAAGTTGATTCTGCTGCGG 1117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1989 TIGIGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1707 ATGCAAAGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGG 1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1587 AGCTTGTTACTCAGATAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAA 1646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1869 CAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAG 1928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1809 TGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGCAAGTAAGATACTGAACATAC 1868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1767 ATCTAGAGCAGAATGCTGTGCTTAAT-------GAGCTTATTTTTGCTC 1808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1647 TCTGTCATGTATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTG 1706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             998 ATGATTTAACGGCGGCAATTGCTCATATTCGCCAATATGGTACCGCGCACTCAGATGCTA 1057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               878 TGCATGCCAGTCAACGCGCTATAACTGCATTGAAAAAGGGACGTGCGACGGTCGATG 937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        698 TTTGTCACACCTTTGTTGACGAAAGTGCTGATTTAGACCAAGCATTAAATGTTATTATTA 757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               578 TCGCAAAAATGCTAAAAATGGATGAGTATATTGATATGCTTATTCCTCGAGGTGGTGCAG 637
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   938 TGACAGAAGCAGATTATTGTGATGAATGGCTATCACTGGATCTGAATGTTGAAGTCGTTA 997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      818 CTATTGCGGAGAGTTTCTTGCCTCAATTAAGTGATGCGATGGCAGCACAAAAGGTTACTT 877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               758 ÁTGCTAÁAGTTCÁGCGTCCAAGCGCATGTÁATTCGTTAGÁÁÁCGCTATTGGTACATGAAG 817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTTGGACTTGGTGCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              carboxylate-synthetase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Promoter of Arabidopsis thaliana for ?1-pyrroline-
        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2048
        0
```

```
US-09-557-884-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               뭉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                        밁
                                                                                                                                                          Ś
                                                                                                                                                                                                                    뭉
                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-557-884-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US/09557884
Patent No. 6506581
Patent No. 6506581
GENERAL INFORMATION:
APPLICANT: Fleischmann et al.
TITLE OF INVENTION: The Nucleotide sequence of the Haemophilus influenzae Rd
Thereof, and Uses Thereof
                                                                                                                                                                                                                                                                                                                       Query Match 5.3%; Score 137.2; DB 4; Length 1830121; Best Local Similarity 47.3%; Pred. No. 2.5e-30; Matches 544; Conservative 0; Mismatches 573; Indels 33; G:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 301-309-8439
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
1312804 AGAACGTTTACAAGGCATTGCTAATGATGTACGCCACGTTATTTCTCTAGCAGATCCCGT 1312745
                                                                                                           1312864 TGAACTTGCCAAACAAANTGGATTATCGGATGCCTTGATTGATCGCTTACTGCTCACACA 1312805
                                                                                                                                                                                                                    1312924 TATTGCAGAACAACTCGAACAACAAGCACCGCTTATCTTAGCCGAAAACGCAAAAGATAT 1312865
                                                       1195 TGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAAGCTGATATGGAAGATCCAAT 1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: 08/476,102
PILING DATE: UN-5-1995
ATTORNEY, JAGENT INFORMATION:
NAME: Michelle S. Marks
RECISTRATION NUMBER: 41,971
REPERENCE/DOCKET NUMBER: 41,971
REPERENCE/DOCKET NUMBER: BB186P3
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 20850

COMPUTER READABLE FORM:

COMPUTER: 3 1/2 inch diskette

COMPUTER: Dell Pentium

COMPUTER: Dell Pentium

OPERATING SYSTEM: MS DOS v6.22

SOPTWARE: ASCII Text

CURRENT APPLICATION DATA:
                                                                                                                                                          1135 AGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACC 1194
                                                                                                                                                                                                                                                                     1075 ТАТТССССАТССССТТСВАССАВАТСТТАСТАСАВТСВАВССТСВЕВАТСВСТТАСВТСТ 1134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/09/557,884
PILING DATE: 25-Apr-2000
CLASSIFICATION: «Unknown»
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
ADDRESSEE: Human Genome Sciences, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1398 TCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTCGTTGAG 1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1338 TCGTTCCTCTCTCTGTGTGTGTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGA 1397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1278 CTGATATTTATTTTCTTACCTTAAATACGACGGTGCTTCACTGAGTCCGACTCAGTTAAC 1337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE DESCRIPTION: SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 TCGTTCCTCTCTCTGTGTGTGTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAG 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGATATTTATTTTCTTACCTTAAATACGACGGTGCTTCACTGAGTCCGACTCCAGTTAAC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STATE: MD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CITY: Rockville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 9410 Key West Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: 301-309-8504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 1830121 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Genome, Fragments
                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                      ω
--
```

В Ś 밁 Ś 밁

```
; Sequence 1, Application US/09643990A
                                          US-09-643-990A-1/c
                                                                         RESULT 6
                                                                                                                                                                                     1311787 TGAAGGCGAA 1311778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1312087 GCGAAAAGÁATGGGGATCATTGGATTTGÁATGTGGTTGTTGTAGGAAGATATTCATGCCGC 1312028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1312204 ACCTA---AACTTGTCTCTCACCTTTCCGCTAAAAACGTAAAATATCATGCAAAATCCAC 1312148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1312324 AÄAAAGTGCGGATCAAAÄTÄAAGCGATTTTTGTTATTGATAÄCGCCÄAAACCCAACGTCC 1312265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1312624 AAGTCTTTGCCTTAAAACGGGTAATGCAGTGATTTTACGCGGTGGTAAAGAAACACAGTT 1312565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1312684 TCCGCTAGGCGTCATTGGTACAATTTATGAAGCTCGCCCAAATGTAACCATTGATGTGGC 1312625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1312744 GGGGAAAATCATAGACGGCGGTACATTGGATAGCGGACTTAAAATCGAACGCGTACGCAC 1312685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1311967 AAGCCTAĞCCCGTCAATTTATCAATCAAGTTĞATGCGĞCAĞCCĞTTTATGTAAATĞCAAĞ 1311908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1312384 ACAACATTCGACTÁTTCCTGTTATTGTGGGTGGTGTGGGGTGTTTGTCATACTTTCGTTGA 1312325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1312444 GGATCGCTATGTGGATATGATTATTCCTCGTGGTGGTTCGGGTTTACATGAATTGTGTAA 1312385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1312504 ATTTGCGGTGCAAGCCATTACCGATCCAAACCGTGAACTCGTTATGCAATTATTAAAAACT 1312445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1885 CAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGC 1944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1786 GCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAG 1845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1375 TTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCG 1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1315 ACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGC 1374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2005 CGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTTGTTCCACAACGCCAG 2064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1846 GGCAAGTAAGATACTGAACATACCAG-------AAGCACGGTCATT 1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1606 AAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGA 1665
                                                                                                                                                                                                                                                           2185 GAGAGGAAAA 2194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1546 TGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAA 1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1255 CGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAGACCTCATC 1314
                                                                                                                                                                                                                                                                                                                                                                                                  AGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGT 1785
                                                                                                                                                                                                                                                                                                                            AAAACTTCACGCTCGTGGCCCAATGGGATTAGAAGCATTAAACCAGTTATAAATGGGTTTG 1311788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACACGCTTTACTGATGGCGGACAATTTGGATTAGGCGCAGAAGTTGCCGTGAGTACCCA 1311848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACAAGATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGG 2124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TATTGAGCATATCCGCCAATATGGTÄCGCAACATTCTGAAAGTATTTTAÄCTTCCTCACA 1311968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TATAGATCACATTCACCGACATGGGAGTGCACACACAGACTGCATTGTGACAGAGGATCA 2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGCACCTGTAACACATTGGAAACATTGTTAGTTCAACATTCTATTGCTGAAGAATTTTT 1312205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCC 1725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACTCATTGGACTTGTGACTTC-----AAGAGAAGAGATTCCTGATTTGCTTAAGCT 1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAA 1494
   Ś
                                                                             밁
                                                                                                                                           Ś
                                                                                                                                                                                                                        片
                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-643-990A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Patent No. 6528289

GENERAL INFORMATION:
APPLICANT: Robert D. Fleischmann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 544; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE: 301-610-5790
TELEFAX: 310-309-8439
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION NUMBER: US/09/643,990A
FILING DATE: 23-Aug-2000
CLASSIFICATION NUMBER: US/09/643,990A
FILING DATE: 23-Aug-2000
CLASSIFICATION CONTROL OF APPLICATION NUMBER: 08/487,429
FILING DATE: 1995-06-07
APPLICATION NUMBER: 08/426,787
FILING DATE: 1995-04-21
FILING DATE: 1995-04-21
ATTORNEY/AGENT INFORMATION:
NAME: Kenley K. Hoover
REGISTRATION NUMBER: 40,302
REFERENCE/DOCKET NUMBER: PB186F1C1
TELECOMMUNICATION INFORMATION:
TETTEDAME: 101-6790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1312924 TÁTTGCAGÁACAACTCGAÁCAAGCACCGCTTÁTCTTÁGCCGÁAAÁACGCAAAAGATAT 1312865
                                                                             1312684 TCCGCTAGGCGTCATTGGTACAATTTATGAAGCTCGCCCAAATGTAACCATTGATGTGGC 1312625
                                                                                                                                                                                                                        1312744 GGGGAAAATCATAGACGGCGGTACATTGGATAGCGGACTTAAAATCGAACGCGTACGCAC 1312685
                                                                                                                                                                                                                                                                                                                                                                   1312804 AGAÁCGTTTACAAGGCATTGCTAATGATGTACGCCÁCGTTATTTCTCTAGCAGATCCCGT 1312745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1312864 TGAACTTGCCAÁÁCÁAAATGGATTATCGGATGCCTTGATTGATCGCTTACTGCTCACACA 1312805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                           1315 ACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGC 1374
                                                                                                                                                                                                                                                                                         1255 CGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAGACCTCATC 1314
                                                                                                                                                                                                                                                                                                                                                                                                                                        1135 AGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACC 1194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1075 TATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGT 1134
   1375 TTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCG 1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE DESCRIPTION: SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
ADDRESSEE: Human Genome Sciences, Inc.
STREET: 9410 Key West Avenue
CITY: Rockville,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: The Nucleotide sequence of the Haemophilus influenzae Rd Genome, Fragments Thereof, and Uses Thereof
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE: 3 1/2 inch diskette COMPUTER: Dell Pentium OPERATING SYSTEM: MS DOS v6.22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STATE: MD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 1830121 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mark D. Adams
Owen White
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hamilton O. Smith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Craig Venter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5.3%; Score 137.2; DB 4; Length 1830121;
47.3%; Pred. No. 2.5e-30;
ative 0; Mismatches 573; Indels 33; Gaps 3;
```

Ś 밁 Ś

Ş 片

멍

S 밁

S

밁 Ş 밁 Ś 밁 Ś

밁

F Ś 밁

Ś

밁 Ś Ş 닭 Ś

吊

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ᅜ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                                                                 RESULT 7
US-09-313-294A-1035
                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Lalgudi, Raghunath V.
APPLICANT: Ito, Laura Y.
                                                                                                                                                                                                                  Sequence 1035, Application US/09313294A Patent No. 6476212
APPLICANT: Lalgudi, Raghunath V.
APPLICANT: Ito, Laura Y.
APPLICANT: Ito, Laura Y.
APPLICANT: Sherman, Bradley K.
TITLE OF INVENTION: POLYNUCLEOTIDES AND POLYPEPTIDES DERIVED FROM CORN EAR
FILE REFERENCE: PL-0017 US
CURRENT FILINGIATION NUMBER: US/09/313,294A
CURRENT FILING DATE: 1999-05-14
NUMBER OF SEQ ID NOS: 7600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1312444 GGATCGCTATGTGGÁTATGATTÁTTCCTCGTGGTGGTTCGGGTTTACATGAATTGTGTÁÁ 1312385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1312504 ATTTGCGGTGCAAGCCATTACCGATCCAAACCGTGAACTCGTTATGCAATTATTAAAACT 1312445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1312624 AAGTCTTTGCCTTAAAACGGGTAATGCAGTGATTTTACGCGGTGGTAAAGAAACACAGTT 1312565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1312027 TÁTTGÁGCATÁTCCGCCAÁTÁTGGTÁCGCAÁCÁTTCTGÁAAGTÁTTTTAÁCTTCCTCACA 1311968
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1312087 GCGAAAAGAATGGGGATTCGAATTGGATTTGAATGTGGTTGTTGTGGAAGATATTCATGCCGC 1312028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1312147 CGCACTTAATATATTGAAACAAGCGGGTGCGAATGTCTGCGAAGTGACAGAAAAAGAATT 1312088
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1312204 ACCTA---AACTTGTCTCTCACCTTTCCGCTAAAAAACGTAAAATATCATGCAAAATCCAC 1312148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1312264 AAGCACCTGTAACACATTGGAAACATTGTTAGTTCAACATTCTATTGCTGAAGAATTTTT 1312205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1312324 AÄÄÄÄAGTGCGĠÁTCAÄÄÄTÄÄÄÄĞĊGÄTTTTTGTTÄTTGATAÄCGCCÄÄÄÄACCCÄÄCGTCC 1312265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1312384 ACAACATTCGACTATTCCTGTTATTGTGGGTGGTGTGGGTGTTTGTCATACTTTCGTTGA 131232
                                                                                                                                                                                                                                                                                                                                                                      1311787 TGAÁGGCGÁÁ 1311778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1311967 AAGCCTAGCCCGTCAATTTATCAATCAAGTTGATGCGGCAGCCGTTTATGTAAATGCAAG 1311908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1311847 AAAACTTCACGCTCGTGGCCCAATGGGATTAGAAGCATTAAACCAGTTATAAATGGGTTTG 1311788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1311907 CACACGCTTTACTGATGGCGGACAATTTGGATTAGGCGCAGAAGTTGCCGTGAGTACCCA 1311848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1666 CAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCC 1725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1546 ГОАГОАССТТАГССАТСТТСТСАТСССААСАССААССАССТСТТСТТАСТСАСАТАВА 1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1495 ACTCATTGGACTTGTGACTTC------AAGAGAAGATTCCTGATTTGCTTAAGCT 1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1435 ATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAA 1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1945 TATAGATCACATTCACCGACATGGGAGTGCACACACAGACTGCATTGTGACAGAGGATCA 2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1885 CAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGC 1944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1846 GGCAAGTAAGATACTGAACATACCAG-------AAGCACGGTCATT 1884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1606 AAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGA 1665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1786 GCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAG 1845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1726 AGCAGCCTGTAATGCGATGGAAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGT 1785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2005 CGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTTTCCACAACGCCAG 2064
                                                                                                                                                                                                                                                                                                                                                                                                                     2185 GAGAGGAAAA 2194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2065 CACAAGATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGG 2124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                              맑
                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 8
US-09-724-623-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-313-294A-1035
                                                                                밁
                                                                                                                          Ś
                               Ś
                                                                                                                                                                                                                                                                                                                                                                         US-09-724-623-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PERL Program
SEQ ID NO 1035
LENGTH: 276
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No.
                                                                                                                                                                                                                                                                           Best Local Similarity Matches 545; Conserva
                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1254
```

```
Query Match 5.2%; Score 132.6; DB 4; Length 276; Best Local Similarity 70.3%; Pred. No. 1.5e-31; Matches 185; Conservative 0; Mismatches 77; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 44, Application US/09724623 Patent No. 6476209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Lubbers, Mark W
APPLICANT: Dekker, James
TITLE OF INVENTION: Polynuclectides, materials incorporating
TITLE OF INVENTION: them, and methods for using them.
FILE REFERENCE: 1048U1
CURRENT APPLICATION NUMBER: US/09/724,623
CURRENT FILING DATE: 2000-11-28
NUMBER OF SEQ ID NOS: 124
SOFTMADER: POLYNOGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Zea mays
FEATURE:
NAME/KEY: misc_feature
OTHER INFORMATION: Incyte ID No. 6476212 700550271H1
NAME/KEY: unsure
LOCATION: 6, 28, 56, 118, 144, 182, 237, 245, 256
OTHER INFORMATION: a, t, c, g, or other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: DNA ORGANISM: Lactobacillus rhamnosus
1068 ГОСТТСАТАГТССССВАТССССТТСВАВССВАВТСТВСТВСВАТСВВАВСТСВЕТ 1127
                                                                                                                                                                         1128 TAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTA 1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    582 TTAGCACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCT 641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 ATGGTCTATACAGCGGTCCACCANAGCGAACCGGGATCAAAGATCATTCATACCTACATC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    642 TAGCTGCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTG 701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      821 ATGACTGCAAAAGTCAAAGCTGC 843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  761 AAAGAAAAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGT 820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 702 AAGGICTTIACACAGGCCCTCCA-AGIGAICCTAACTCAAAGTIGATCCACACTTTIGIT 760
                                                                                                          161 AAGATCTAAAAGCGGCA-----GCAAGCTTGCCGGCTAAGTTCACGGATCGATTGGTAC 214
                                                                                                                                                                                                                                         101 TETTEGCCATEGTTACGECTCTTGAAACGCATACTGAAACAATTTTGGGAGCTAATCATG 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 TAGCTGGTCTTTTGGCTATTGAACTTAAAGCAGATCTCCTTGTTCTACTAAGTGATGNAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 TCAGCNCTAGAAAGGCTCCATATGAGGNTTCATCTGGTATATTCTGGGATAATGANAGTT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGANAGCTAAAGTGNAGGCTGC 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                     4.8%; Score 124; DB 4; Length 1254; 46.9%; Pred. No. 2.2e-28;
                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches 590; Indels 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
```

```
1890 ATGAGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1839 GACCAAGGGCAAGTAAGATACTGA-----ACATACCAGAAGCACGGTCATTCAACC 1889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1779 ATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTG 1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1719 ACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGA 1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1659 ATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGG 1718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1599 AGATAAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTAT 1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1539 TTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTC 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1368 AGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGG 1427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1308 CCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTAC 1367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1248 ATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAGA 1307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1950 ATCACATTCACCGACATGGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAG 2009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1428 CCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTG 1487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       812 ACGCGCAGCTGCCTTTAATTGCTGCGGCACTGCAAGCGCATGGTGTCGAATTGCGCGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    575 TGCACCTGAATGGCTACATTGATGTGCTGATTCCGCGTGGTGGCCGAGGGTTGATTAAAG 634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            872 ATGAACGGGCGCGGGCAATTGTGCCGAACATGCAGATCGCCACGGAAGAAGACTGGGATA 931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         455 CGCTGCACAACATTTGGCCTTGGCGACCGTTTTACAGGCTGCATTGACCGCACAAGGAT 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    395 ATGCTGCTGCGTTAACTTTTAAAAGTGGCAATGCGGTCATTCTCCGTGGCGGTAAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           335 AACGGGTACCTTTAGGGGTGGTCGGGATGATTTATGAGGCCCGGCCAAATGTAACCGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 215 TGACAGCCGAGCGGATTGCTGACATGGCAGCAGGGGTTCGCCAAGTTGCCGCCTTACCTG 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGTTGATGCGTATGCGCAAGCCCAGATGGCAATCGACATTGTTGTCAACGCCAAAGTTC 754
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGTCGTTGAACAGGCTACCGGTACCGGTCATTGAAACCGGGGCGGCAATTGTCACATTT 694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCCAACCGCCCAGACGGATAAGGCCTGGGTGAATCACGCAGGACTGAATATTGCGCAAA 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATAGTCAGCAATTCCTCCAACAGGTAGATGCGGCTGTTGTCTATGTGAATGCCTCAACTC 1111
GTAACGGACAGGTACGCGAAGG 1253
                                                                                                             GAAAAGGACAAGTTGTCGACGG 2211
                                                                                                                                                                                                                                                                                                                                  GGTTTACAGACGGCTTCGAGTTCGGTTTCGGCGCAGAGATCGGTATTAGTACGCAAAAAT 1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGA 2129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAA 2069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGCATATCAACGCACACACACGAGCGAGCGAGGCCATCATTACGGATAACTACCAAA 1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCGAATATAATGACTTAATTATGGCGGTCAAGGTGGTGGATTCCGAGGAAGAAGCGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCGGCCGTCTGTTTGCAATGCGGCCGAGAAACTTTTAATCCACGCTGATGTTG----CAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCCAÁÁÁGACGCGATTCAATTAÁTCACGGACCCGAAGCGAGAAGTCGCGAATCÁGATGA 574
                                                                                                                                                                                                                          TACACGCACGCGACCGATGGGGTTAGCGGCGTTGACGACGATTAAGTATCAGGTGCTGG 1231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       871
```

밁

성 유

Ś

Ş

B & B & B & B

S

성 유

정 유 성 유 명 음 성 명 성 명

US-09-313-294A-1616

음 성 음

8 8 8 8 8 8 8 8

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-961-527-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-313-294A-1616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:

APPLICANT: Lalgudi, Raghunath V.

APPLICANT: Ito, Laura Y.

APPLICANT: Sherman, Bradley K.

TITLE OF INVENTION: POLYNUCLEOTIDES AND POLYPEPTIDES DERIVED FROM CORN EAR
FILE REFERENCE: PL-0017 US

CURRENT APPLICATION NUMBER: US/09/313,294A

CURRENT FILING DATE: 1999-05-14

NUMBER OF SEQ ID NOS: 7600

SOPTWARE: PERL Program

SEQ ID NO 1616
                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 22, Application US/08961527 Patent No. 6420135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1616, Application US/09313294A Patent No. 6476212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 167;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
ORCANISM: Zea mays
ERATURE:
ENAME/KEY: misc_feature
OTHER IMPORMATION: Incyte ID
NAME/KEY: unsure
LOCATION: 243
OTHER IMPORMATION: a, t, c, g
                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ENGTH: 261
                            MEDIUM TYPE: Diskette, 3.50 inch, 1
COMPUTER: HP Vectra 486/33
OPERATING SYSTEM: MSDOS version 6.2
SOFTWARE: ASCII Text
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/961,527
                                                                                                                                        COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                            APPLICANT: Charles Kunsch
TITLE OF INVENTION: Strep
                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.8%;
Local Similarity 69.3%;
les 167; Conservative
                                                                                                                                                                                                                   CITY: Rockville
STATE: Maryland
CLASSIFICATION:
                 FILING DATE
                                                                                                                                                                                                                                                                 STREET:
                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                                                                                   ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1921 AGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGTGCACACAC 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2161 A 2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 A 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                  20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGGGTCGAAGG 2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGCCGCTGTGTTTCATAATGCAAGCACAAGGTTTTGTGATGGGACGCGTTTTGGGCTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGG 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGACTGCATCATCACAACTGATAGAAGTGCTGCAGAGGCCTTTCTGCAGCAAGTTGATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TĠĊŢĠĂĠĠŢŢĠĠĊĄŢĂĀĠŢĀĊĄĠĄĠĊĠĊĄŢĄĊĄŢĠĊĊĠĊĠĠĄĊĊŢĠŢŢĠĠĄĠŢŢĠĄŢĠĠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTTGTTGATGATGTGCAGTCAGCTATCGÁTCACATAAATCGTTATGGAAGTGCACACAC
                                                                                                                                                                                                                                                                 9410 Key West Avenue
                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                   Human Genome Sciences,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Incyte ID No. 6476212 700551225H1
                                                                                                                                                                                                                                                                                                                                              Streptococcus pneumoniae Polynucleotides and Sequences
                                                                                                                                                                                                                                                                                                                               391
                                                                                                                                        3.50 inch, 1.4Mb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g, or other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 122.6; DB 4; Length 261; Pred. No. 2.1e-28; 0; Mismatches 74; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

```
Ş
                                                                                           맑
                                                                                                                                       Š
                                                                                                                                                                                           맑
                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-961-527-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO: 22:
SEQUENCE CHARACTERISTICS:
LENGTH: 28171 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFHONE: (301) 309-8504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Brookes, A. Anders
REGISTRATION NUMBER: 36,373
REFERENCE/DOCKET NUMBER: PB340P1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Loca L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1049 GAAGACAGGAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACA 1108
1760 CATAAGGA------TOTAGAGCAGAATGCTGTGCTTAATGAGCTT 1798
                                                                                             6560 ATCAACAATGCTÁAAACCAGTCGTCCTTCTGTTTGTAÁTGCCATGGAGGTTCTGCTGGTT
                                                                                                                                                                                           6500 ACTGGGATTGTCCATGTCTATGTGGATAAGGATGCAGACGAAGACAAGGCGCTGTCTATC
                                                                                                                                                                                                                                       1640 GATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATA 1699
                                                                                                                                                                                                                                                                                                                                                                                         6380 GAAAGTAGTTATGCTATGAAGGCCAAGGGCTATCTAGACCTTCTCATTCCTCGTGGA 6439
                                                                                                                                                                                                                                                                                                                                                                                                                                        1520 GAAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGA 1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1466 GATGCAATTCCAGAGACTGTTGGGGGTAAACTCATTGGACTTGTG-----ACTTCAAGA 1519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1229 AAGCTAGCTGATATGGAAGATCCAATCGGCCGTGTTTAAAGAAAAACAGAGGTGGCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1169 ATGGTGGCTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5963 ATTTTAGCGGCTAATGCCCTCGATATGGCAGCGGCTAAGGGGAAAATCTCAGATGTG---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5903 GAAGTGAAAAACCAAGCCTTGCTAGCCATGGCTGATCACTTAGTGGCTGCTGCTGAGGAA 5962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        578;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     h 4.8%;
Similarity 47.0%;
78; Conservative
                                                                                                                                            GTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTG 1759
                                                                                                                                                                                                                                                                                           GGAGCTGGCTTGATCAATGCAGTGGTTGAGAATGCGATTGTACCTGTTATCGAGACAGGG 6499
                                                                                                                                                                                                                                                                                                                                        AGCAACAAGCTTGTTACTCAGATAAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCT 1639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGACCTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTG 1408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAGTGGTTGCCTTACCAGATCCAATCGGTGAAGTTTTAGAAACAAGTCAGCTTGAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGAAGGGTGGAAAGGAGGCCCGGCGATCAA---ATGCTATCTTACACAAGGTGATCACT 1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTTTGGTTATCACAAAAAAACGTGTÁGCTATGGGTGTCATCGGTATTATCTATGÁAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATGTTGGATCGTCTTTATTTGGATGCAGATCGTATAGAAGCGATGGCAAGAGGAATTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTCTTGTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGTCCAAATGTGACGTCTGATGCGGCTGCTTTGACTCTTAAGAGTGGAAATGCGGTTGTT 6259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCAAAGCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCA 1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGCTTGGAGACGACTACTATTCATCCAAATGTGATTCAACTGGTGGAGGATACTAGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTCGTAGTGGTAAGGATGCCTATCAAACAACCCATGCCATTGTCACAGCCTTGAAGAAG 6319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (301)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            309-8512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches 616; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 122.4; DB 4; Length 28171; Pred. No. 6.3e-27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  36; Gaps
                                                                                             6619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6079
```

```
밁
                                                                                                                                                                                                                                                                                           밁
                                                           밁
                                                                                                                á
                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; ORGANISM: Acinetobacter baumannii US-09-328-352-3804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-328-352-3804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Gary L. Breton et al.
APPLICANT: Gary L. Breton et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO ACINETOBACTER
TITLE OF INVENTION: BAUMANNII FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: GTC99-03PA
CURRENT APPLICATION NUMBER: US/09/328,352
CURRENT FILING DATE: 1999-06-04
NUMBER OF SEQ ID NOS: 8252
SEQ ID NO 3804
LENGTH: 1278
LENGTH: 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 3804, Application US/09328352 Patent No. 6562958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 472; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
      1482 CTGTTGGGGGTAAACTCATTGGACTTGTGACTTCAA-----GAGAAGAGATTCCTG 1532
                                                                                                                1422 AGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGA 1481
                                                                                                                                                                                                                                1362 TTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAA 142
                                                                                                                                                                                                                                                                                                                                                   1302 AGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCAC 1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1242 TGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7100 ATGAAGATTGGATTTATCGGTTTGGGGAAT 7129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2156 GAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTCGACGAGAGAC 2215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6740 TCAGGTCAAGCAGCTGAGACCCAAGACTTTGACACCGAGTTTTTAGACTATGTCCTTGCT 679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1856 ATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACT 1915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6680 AAGGAAGCTGGACTGGAACCAATTCAÁTTCCGCCTAGÁTAGCAAAGCÁÁGCCAGTTTGTT 6739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    350
                                                                                                                                                                           410 CACTIGAAGCIGCATCITTAGCAATIAAATCGGGCAATGCCATTATITTACGIGGIGGCI 469
                                                           CAGAAGCACTTGAGTCAAATAAAGCAATCGCAGAAGCGGTGAAGCATGGCTTAAAAAGTTG 529
                                                                                                                                                                                                                                                                                           GGAAAATGCGTGTACCTCTAGGTGTCGTTGGTATGATTTACGAATCACGTCCAAATGTCA 409
                                                                                                                                                                                                                                                                                                                                                                                                           TIGITGATCCAATIGGGGAAATTACGGATCTTGCATATCGCCCCACAGGCATTCAAATTG 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATGGAATTGTTTACACCCATCAGGACATT 2245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGGGTC 2155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACTCTGCAGCGGTGTATGTTAATGCCTCAACTCGTTTCACAGATGGAGGACAATTTGGT 6979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CATTCGGATGCTATTGTGACGGAAAATGCTGAAGCTGCAGCATACTTTACAGATCAAGTG 6919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGTGCA 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AÄÄGAGTTGACCÄGCTACÄAGTATGTGGTTGCCGGTGÄTGGGCÄGATAAGGGAGTAAGAG 7099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTGGTTGTGAAATGGGGATTTCTACTCAGAAATTGCACGCGCGTGGTCCCATGGGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATAGCGCTGCTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTTGGA 2095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTG 2035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTAAGGTTGTGAGCAGTTTAGAAGAAGCGGTTGCGCACATTGAATCCCACAGCACCCAT 6859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4.7%; Score 120; DB 4; Length 1278;
48.2%; Fred. No. 4.1e-27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches 490; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
```

片 Ş 맑

Gaps

60

240

```
APPLICANT: Ito, Laura Y.

APPLICANT: Sherman, Bradley K.

TITLE OF INVENTION: POLYNUCLEOTIDES AND FOLYPEPTIDES DERIVED FROM CORN EAR FILE REFERENCE: PL-0017 US

CURRENT APPLICATION NUMBER: US/09/313,294A

UNMEER OF SEQ ID NOS: 7600

SEQ ID NO 4491

LENGTH: C.
NAME/KEY: misc_feature
OTHER INFORMATION: Incyte ID No. 6476212 700348515H1
                                                                                        ORGANISM: Zea mays
                                                                                                                       TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1130 CAACTCGTTTTGCCGATGGCTTTGAATATGGTTTAGGTGCTGAAATTGGTATCTCAACAG 1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1070 ATACTTTGGCACGTCAGTTCTTGGCTCGCGTAGATTCAAGCTCCGTCGTAGTTAATGCAT 1129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1010 CAATTGACCATATCAACAAATATGGTTCGCATCATACCGATGCCATTGTGACAGAGAACT 1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1944 CTATAGATCACATTCACCGACATGGGAGTGCACACACAGACTGCATTGTGACAGAGGATC 2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1884 TCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTG 1943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1533 ATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTG 1592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1190 ATAAGATTCATGCACGCGGCCCTGTTGGCTTAGAAGGTTTAACTTCTCAAAAATGGATTG 1249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2064 GCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2004 ACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCA 2063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1831 GTATGGTGGACCAAGGGC-----AAGTAAGATACTGAACATACCAGAAGCACGGTCAT 1883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1772 GAGCAGAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAA-TGGAGTCACTTT 1830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1713 AGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCAT-AAGGATCTA 1771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1653 ATGTATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAA 1712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2184 TGAGAGGAAAAGGACAAGTT 2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        890 GTTGCCCAGAAACACGTCGTATTTTAGGAAGCTCTGTAAAACCTGCGACAGAAGAAGATT 949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             830 CAGAAGTTTTCTTACCACACATTGCTGAGCTTTATGCTGAAAAAACAAGTTGAGTTACGTG 889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   710 ATGTGTTTGTAGAAGCACAAGCGGACTTACAAAAAGCGTTACCAATTACCTTGAATGCTA 769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           650 TTGAGCGTGTAACCAACGAAGCTCGTATTCCTGTGATTAAGCATCTTGATGGTAACTGTC 709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           530 CTGGTTTACCTGAGCACTCAGTACAAGTGATTGAAACTTCTGACCGTGCAGCGGTTGGTC 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCTCATTACTATGGCTGÁGTATGTAĠÁTGTŤATTGŤTČĆACGTGGTGÁTÁAAÁGCTŤAA 649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTTAGGTGACGGTCAAATT 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGTATACCGAATATTTAGGACCGATTCTTGCAGTTAAAGTGGTGAGCGGTATTGATGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAACACATCGTTACGGCGTTTGTAATGCAATGGAAACTCTGCTCGTTGATGAAAAAAATTG 829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTACTCAGATAAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTC 1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; NAME/KEY: unsure
; LOCATION: 205
; OTHER INFORMATION: a, t, c, g, or other
US-09-313-294A-4491
   Ś
                                                                                                              S
                                                                                                                                                                             뮍
                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-313-294A-6792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-313-294A-6792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/09/313,294A
CURRENT FILING DATE: 1999-05-14
NUMBER OF SEQ ID NOS: 7600
SOFTWARE: PERL Program
SEQ ID NO 6792
LENGTH: 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 6792, Application US/09313294A Patent No. 6476212
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Lalgudi, Raghunath V.
APPLICANT: Ito, Laura Y.
APPLICANT: Sherman, Bradley K.
TITLE OF INVENTION: POLYNUCLEOTIDES AND POLYPEPTIDES DERIVED FROM CORN EAR
FILE REFERENCE: PL-0017 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: Incyte ID No. 6476212 700352413H1
NAME/KEY: unsure
LOCATION: 7, 62, 68, 195
OTHER INFORMATION: a, t, c, g, or other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PEATURE: misc feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 64.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                               187 GGGGAGGCNCGGTTCTCTCTGTGAACAGGTGAAGCAACTGAATTTTCAAGGGTATGAGGT 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241 AGGATGCAAGTCTGTGGGAGCCATCCAAGGATGTTAGTGCTCGTGAGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        951 AAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGG 1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 AGTGAAGGCTGCTTTTGTGGCTTCGAACAGTGGCACACCTGTTGTTATTACAAGTGGATT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  832 AGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTA 891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   772 TCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACTGCAAA 831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     712 САСАGGCCСТССААGTGATCСТААСТСАААGTTGATCCACACTTTTTGTTAAAGAAAAACA 771
      271 GATATTGGTGTCATCTGGTGCGGTTGGTCTTGGCAGGCAAAGGCTTC 317
                                                                                                                    127 GCGAÁTCATTATCAAGGTGGGCÁCGGCTGTTGTCÁCTGGCATGAATGGCCGATTGGCCAT
                                                                                                                                                                                                                                         151 ACGTATCGTCGTTAAGGTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCT 210
                                                                                                                                                                                                                                                                                                                                                       91 GACGACGACGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAA 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCAGCTGAGAACATAGATAAAGT-CCTCAGAGGACTACGTGTTGGAACCTTGTTTCATC 950
                                                                                                                                                                                                                                                                                                  GNCCATGGCCATGGCCATGGAGACCGCCGATCCTGCCCGTGCATTCGTGAAGGACGTCAA 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCATCTCAGÁGCATTGTTÁGAGTNÉCTÉCAAGGAGAAGATTGGTACTCTCTTCCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       64.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 115.8; DB 4;
Pred. No. 3.1e-26;
O; Mismatches 102;
                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                Score 98.6; DB 4; Length 294; Pred. No. 8.1e-21; 0; Mismatches 81; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 μ·
                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   291
```

밁 S B

밁 δ 밁 8

Gaps

0

186

Ś

밁 Ş 멂 Ś B S 片 Ş 멂 Ş 밁 5

Ś 밁

```
; NAME/KEY: misc feature; tocation: (B) LOCATION 1...462; SEQUENCE DESCRIPTION: SEQ ID NO: 2515: US-09-107-532A-2515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
US-09-107-532A-2515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                            Ś
                                                                                                   В
                                                                                                                                            ક
                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/09/107,532A
APPLICATION NUMBER: US/09/107,532A
FILING DATE: 30-Jun-1998
PRIOR APPLICATION NUMBER: 60/085,598
APPLICATION NUMBER: 60/085,598
FILING DATE: 14 May 1998
APPLICATION NUMBER: 60/051571
FILING DATE: July 2, 1997
ATTORNEY/ACENT INFORMATION:
NAME: ARINIELLO, Pamela Deneke
REGISTRATION NUMBER: 40,489
REFERENCE/DOCKET NUMBER: GTC-012
TELECOMMUNICATION INFORMATION:
TELEPAN: (781)893-5007
TELEPAN: (781)893-5007
TELEPAN: (781)893-5007
TELEPAN: (781)893-515:
SEQUENCE CHARACTERISTICS:
LENGTH: 462 base_1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2515, Application US/09107532A

Patent No. 6583275

GENERAL INFORMATION:
APPLICANT: Lynn A Doucette-Stamm and David Bush
APPLICANT: Lynn A Doucette-Stamm and David Bush
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO
ENTEROCOCCUS FAECIUM FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                           Matches 170; Conservative
                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                               / Match 3.7%;
Local Similarity 57.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: GENOME THERAPEUTICS CORPORATION
STREET: 100 Beaver Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
                                                                                                                                                                                                                                                          1914 CTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGTG 1973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: circular MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 7310
                                                 2034 TGGATAGCGCTGCTGTTTCCACAACGCCAGCAAGATTCTCAGATGGTTTCCGATTTG 2093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGINAL SOURCE:
                                                                                                                                                    1974 САСАСАСАБАСТБСАТТБТБАСАБАББАТСАСБААБТТБСАБАБСТАТТССТТСБССААБ 2033
284 TGGACGCGGCGGCTGTCTATGTCAATGCCTCCACTCGTTTTACAGACGGATCGGTATTTG 343
                                                                                                        224 AACATTCAGAAACGATCGTGACAGATAGTTATGCGGCTAGTCAACGTTTCTTAAATGAAG 283
                                                                                                                                                                                                      164 CTGTCAAAGTGGTCGATTCTTTGGATGAAGCAATTGCACATATCAATCGGCATAATACTA 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        247 GATTCTGGTAACCTCAGGAGCTGTTGGGTGTTGGGAGGCAGAGGCTCC 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Waltham
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Enterococcus faecium
                                                                                                                                                                                                                                                                                                         0; Mismatches 125; Indels
                                                                                                                                                                                                                                                                                                                               Score 95; DB 4; Length 462; Pred. No. 1.5e-19;
                                                                                                                                                                                                                                                                                                           <u>,</u>
                                                                                                                                                                                                                                                                                                           Gaps
```

Search completed: March 10, 2004, 12:07:03 Job time : 193.077 secs

```
; ORGANISM: Zea mays
; PEATURE:
; HAME/KEY: misc_feature
; OTHER INFORMATION: Incyte ID No. 6476212 700612075H1
US-09-313-294A-3665
                                                                                        밁
                                                                                                                                Ś
                                                                                                                                                                               밁
                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                            문
                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 15
US-09-313-294A-3665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Lalgudi, Raghunath V.
APPLICANT: Ito, Laura Y.
APPLICANT: Sherman, Bradley K.
TITLE OF INVENTION: POLYNUCLEOTIDES AND POLYPEPTIDES DERIVED FROM CORN EAR
FILE REFERENCE: PL-0017 US
CURRENT APPLICATION NUMBER: US/09/313,294A
CURRENT FILING DATE: 1999.05-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS:
SOFTWARE: PERL Progra
SEQ ID NO 3665
LENGTH: 256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3665, Application US/09313294A Patent No. 6476212
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 152; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match 3.6%; Local Similarity 60.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2094 GACTTGGTGCAGAGGTGGGGTAAGCACGGCAGGATCCATGCTCGTGGTCCAGTCGGGG 2153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2154 TCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTCGA 2208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            344 GTTTTGGTGCAGAGATTGGTATCTCTACTCAAAAGTTGCATGCCCGTGGTCCAATGGGGT 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     404 TAAATGAATTAACTTCCACAAAATATATCATTTATGGCGATGGACAAATCCGCGA 458
247 TTĠTCAATAG 256
                                                                                                                                                                                 127 CAGGCAATTTTGGTGTTCTTTGTGAACAGGTGAAAGAGATAAATGCTCTAGGATACGAGG
                                            330 TAGTCAATAG 339
                                                                                        187 TGÁTCATTGTGTGCTGAGGTGCTGTTGGTGTGGGGAAGCAGAGGCTCAATTACAGGAAGC 246
                                                                                                                                     150 AACGTATCGTCGTTAAGGTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTC 209
                                                                                                                                                                                                                                                                            67 AACGCGTCATCATCAAGGTGGGCACTGCAGTTGTCACGAGGCATGATGGGGCGAGTATCCA 126
                                                                                                                                                                                                                                                                                                                                                                                                                  90 AGACGACGACGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCA 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PERL Program
                                                                                                                                                                                                                                                                                                                                                                     AGCCCCGGCGGGGGGTCATGGCCACCGCAGACCAGAGCCGTATTTTCATGAAGGACGTCA 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   7600
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 93.2; DB 4; Length 256;
Pred. No. 3.7e-19;
0; Mismatches 98; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence:
                                                                                                                                                                                                                                                                                                                        Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
    1669.8
11669.8
11085.6
1085.2
1049.2
1046.2
1046.1
1046.1
1046.1
1046.1
1046.1
1046.1
1046.1
1046.1
1046.1
                                                                                                                                                                                                                                                                                                        Score
                                                                                                                                                                                                                                                2571
2154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      March 10, 2004, 10:27:40 ; Search time 839.374 Seconds (without alignments) 11202.698 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-026-767-2
2571
                                                                                                                                                                                                                                                                                                        Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2421054 seqs, 1828716029 residues
                                                                                                                                                                                                                                                                  100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14:
16:
17:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10:
11:
12:
13:
                                                                                                                                                                                                                                                                                                                        Query
                    41.0
40.8
40.7
40.7
40.7
40.7
                                                                                                                                                   45.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Published_Applications_NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ctgatatttatttcttacc.....tcaagatactactactttc 2571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GenCore version 5.1.6
Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     / Cgn2_6/ptodata/1/pubpna/US09_BUBCOMB.seq:*
/ cgn2_6/ptodata/1/pubpna/US09_FUBCOMB.seq:*
/ cgn2_6/ptodata/1/pubpna/US09_RUBCOMB.seq:*
/ cgn2_6/ptodata/1/pubpna/US09_RUBCOMB.seq:*
/ cgn2_6/ptodata/1/pubpna/US10B_PUBCOMB.seq:*
/ cgn2_6/ptodata/1/pubpna/US10B_PUBCOMB.seq:*
/ cgn2_6/ptodata/1/pubpna/US10_RUBCOMB.seq:*
/ cgn2_6/ptodata/1/pubpna/US10_NEW_PUB-.seq:*
/ cgn2_6/ptodata/1/pubpna/US10_NEW_PUB-.seq:*
/ cgn2_6/ptodata/1/pubpna/US10_NEW_PUB-.seq:*
/ cgn2_6/ptodata/1/pubpna/US10_NEW_PUB-.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /cgn2_6/ptodata/1/pubpna/US07
/cgn2_6/ptodata/1/pubpna/PCT N
/cgn2_6/ptodata/1/pubpna/rro~~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cgn2
                                                                                                                                                                                                                                                                                                      Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               n2_6/ptodata/1/pubpna/US07_PUBCOMB.seq:*
n2_6/ptodata/1/pubpna/PCT_NEW_PUB.seq:*
n2_6/ptodata/1/pubpna/US06_NEW_PUB.seq:*
n2_6/ptodata/1/pubpna/US06_PUBCOMB.seq:*
n2_6/ptodata/1/pubpna/US07_NEW_PUB.seq:*
n2_6/ptodata/1/pubpna/PCTUS_PUBCOMB.seq:*
n2_6/ptodata/1/pubpna/US08_NEW_PUB.seq:*
n2_6/ptodata/1/pubpna/US08_PUBCOMB.seq:*
n2_6/ptodata/1/pubpna/US08_PUBCOMB.seq:*
    6/ptodata/1/pubpna/US09A
                US-10-424-599-44242

US-10-026-767-1

US-10-424-599-44248

US-10-425-114-5243

US-10-425-114-3280

US-10-425-114-3280

US-10-425-114-32810

US-10-425-114-3146

US-10-425-114-3146

US-10-424-999-44244
                                                                                                                                                                                                                                                                                                        Ħ
                                                                                                                                                                                         US-09-938-842A-1866
US-09-938-842A-1866
                                                                                                                                                                                                                                                  US-09-938-842A-1391
                                                                                                                                                                                                                                                                  US-10-026-767-2
                                                                                                                                                                                                                               US-09-938-842A-1391
                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PUBCOMB.seq:*
Sequence 1391, Ap
Sequence 1395, Ap
Sequence 1866, Ap
Sequence 1866, Ap
Sequence 44242, A
Sequence 44248, A
Sequence 5243, Ap
Sequence 4280, Ap
Sequence 32617, A
Sequence 31146, Ap
Sequence 31146, Ap
Sequence 4244, A
Sequence 4244, A
                                                                                                                                                                                                                                                                                                        Description
                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                  2, Appli
```

							ი	ი				O										C								
ć	N .	44	4	42	41	40	39	38	37	36	υ 5	3 4	ε. 3	32	31	30	29	28	27	26	N UI	24	23	22	21	20	19	18	17	16
	10.1	156.4	158.4	161.4	165.4	171.8	176.4	176.4	179	191.4	192.2	195.8	203.6	211	219.4	220.4	221.4	281.6	291.6	292.4	342.6	346.4	383.4	442	461.6	494.2	494.2	515.4	572	746
	n c	J	ი 2	6.3	6.4	. 7	6.9	ġ		7.4	7.5	7.6		8.2	œ	8. 6	•	11.0		11.4	13.3	13.5	14.9	17.2	18.0	19.2	19.2	20.0	22.2	29.0
	1000	7696	1233	1248	395	1257	3011208	1163020	1251	1353	1302	570	1281	1299	541	843	1281	576	568	2507	2907	792	876	1218	1241	1321	903	1345	1601	2214
ŀ	٠ د	٥	12	12	12	12	15	15	12	15	15	15	15	15	12	12	15	15	15	9	14	9	12	15	12	12	12	12	12	15
1000	10-10-282-122	US-09-070-927A-537	US-10-282-122A-18176	US-10-282-122A-24417	US-10-424-599-58022	US-10-282-122A-15665	5 US-10-398-221-2058	5 US-10-398-221-10		US-10-369-493-25789	US-10-369-493-26502	US-10-260-238-4888	US-10-369-493-42747	US-10-369-493-44637	US-10-424-599-93815	US-10-424-599-111549	US-10-369-493-43699	US-10-260-238-5797	US-10-260-238-3278	US-09-925-301-397	US-10-171-581-114	US-09-770-445-844	US-10-424-599-44245	260-238	US-10-424-599-43856	-10-425-114	4	425	ភ	US-10-260-238-466
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Semience 39130 A	Sequence 537, App	18176,	Seguence 24417, A	Sequence 58022, A	15665	e 2058	10,	Sequence 32901, A	e 25789	Sequence 26502, A	Sequence 4888, Ap	Sequence 42747, A	44637	93815	Sequence 111549,	Sequence 43699, A	Sequence 5797, Ap	Sequence 3278, Ap	Sequence 397, App	Sequence 114, App	Sequence 844, App	Sequence 44245, A	Sequence 3317, Ap	43856	21021	e 44403		8907,	,

ALIGNMENTS

and its

RESULT 1 US-10-026-767-2

```
Sequence 2, Application US/10026767
publication No. US20030014774A1

GENERAL INFORMATION:
APPLICANT: Hitachi, LTD.
APPLICANT: Bio-oriented Technology Research Advancement Institute (BRAIN)
APPLICANT: Bio-oriented Technology Research Advancement Institute (BRAIN)
APPLICANT: Japan International Research Advancement Institute (BRAIN)
APPLICANT: Bio-oriented Technology Research Advancement Institute (BRAIN)
APPLICANT: Bio-oriented Technology Research Advancement Institute (BRAIN)
APPLICANT: Bio-oriented Technology Research Advancement Institute (BRAIN)
APPLICANTION: Tratagenic rice plant and its family with environmental
ITILE OF INVENTION: Stress resistant by proline accumulation of high level
ITILE PLANTION: MOMENTE: US/10/026,767
CURRENT PEPLICATION NUMBER: US/10/026,767
CURRENT PILING DATE: 2001-12-27
NUMBER OF SEQ ID NOS: 3
SEQ ID NO 2
ILENGTH: 2571
TYPE: DNA
ORGANISM: Arabidopsis thaliana
FEATURE:
COCATION: 107...2260
AUTHORS: Voshi Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Keishiro
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Weda, Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Yoshiba, Tomohiro Kiyasue, Takeshi Katagiri, Hiroko
AUTHORS: Yoshiba, Tomohiro Kiyasue, Takeshi
```

Оу 1021	o w	o o	Qy 84	Qy 78 Db 78	Qy 72 Db 72	99 qa	Qy 601 Db 601	Qy 541 Db 541	Qy 481 Db 481	Qy 421 Db 421	Qy 36 Db 36	Оу 301 Дъ 301	Qy 24 Db 24	Qy 18 Db 18	Оу 12 Db 12	Db 61	1	Best Local Matches 257 Qy	ν. Υ
			1 TGCAGTCAATGCAGCT	1 GATTACATTCGGCGAC	1 TCCAAGTGATCCTAAC	1 GGAACTGAAAGCTGAI 1 GGAACTGAAAGCTGAI	AA			1-1	GCCTCAGACTGAACTT		TGCGGAATTAAACTCG	TGTTACTGGAAAAGGT	TCGTTCACGTGCTTTT	regracerererer	CIGATATITATITICT	H (O	
CTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATTCTG	TTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAG	GAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCG 	TGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTGA	TTACATTCGGCGACAAATCAAGATTAGGGAGAGAGGGGTATGACTGCAAAAGTCAAAG 	TCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGA	GGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTACACAGGCC	ATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTT	TGATTTGAGGGTTATTCCAATTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCC	CAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCT 	CTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGA 	:ctcagactgaacttgatgggaaggcttgtgctggtgttggacaaagcagtcttatgg 	TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAA 	AAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCT	rctggaaaaggtggaagattggctcttggtcgtttaggagcactgtgtgaacagct 	TCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGT		CTGATATTTATTTCTTACCTTAAATACGACGGTGCTTCACTGAGTCCGACTCAGTTAA	0%; Pred. No. 0; 0; Mismatches TACCTTAAATACGACGGT	Score 2571;
CAGGAAAAAAATTCTGCTT	GACATGGCAGTTGCTGCC	IGGAACCTTGTTTCATCA! 	;atcataaccagtgggta; atcataaccagtgggta;	.gggggtatgactgcaaa. .gggggtatgactgcaaa.	TTTGTTAAAGAAAAACAI TTTGTTAAAGAAAAACAI	:GATGTTGAAGGTCTTTAC GATGTTGAAGGTCTTTAC	GATAGCTTAGCTGCTCTA 	GATGCTATTAGCACCCG GATGCTATTAGCACCCG	CTTAATGAAACTGTCAAG CTTAATGAAACTGTCAAG	acegcagetcaaettete 	GGTGTTGGACAAAGCAGT 	AATAGCAGCTTTGCGGAT	TTGGTGTCATCTGGTGCG TTGGTGTCATCTGGTGCG	CGTTTAGGAGCACTGTGT CGTTTAGGAGCACTGTGT	ATCGTCGTTAAGGTTGGG ATCGTCGTTAAGGTTGGG	ACGACGACGATAATGGAG ACGACGACGATAATGGAG	GCTTCACTGAGTCCGACT	0; Indels 0	DB 14; Length 2571
108	ىر د	10 10	TTCAGCTGA 900	AGTCAAAGC 840 AGTCAAAGC 840		CACAGGCCC 720	ACTGGCGTT 660	NAGAGCCCC 600	FICTATGCT 540 FICTATGCT 540	GTGAATGA 480 GTGAATGA 480	CTTATGGC 420 CTTATGGC 420	CTTCAGAA 360 CTTCAGAA 360	GTTGGTCT 300	GAACAGCT 240	;ACAGCAGT 180 ;ACAGCAGT 180	μь	* O-	GAGTTAAC 60	<u>,</u>
					<u> </u>					· · · · · · · · · · · · · · · · · · ·						****	-	·	
Q	B &	qq	₿ <i>€</i>) B &) B &	מם ג	o B :	o da i	od p	O B (δ β <i>'</i>	Q B X	₹ B :	S B 7	o d	Q Db	8 8	5, 55 B	
2101	2041 2041	1981	1921	1861	1801	1741	1681 17 41	1621	1561	1501	1441	1381	1321	1261	1201	1141	1141	1021	,
2101	2041 2041	1981	1921	1861	1801	1741	1681 17 41	1621	1561	1501	1441	1381	1321	1261	1201	1141	1141	1021	,
2101	2041 2041	1981	1921	1861	1801	1741	1681 17 41	1621	1561	1501	1441	1381	1321	1261	1201	1141	1141	1021	,
2101	2041 2041	1981	1921	1861	1801	1741	1681 17 41	1621	1561	1501	1441	1381	1321	1261	1201	1141	1141	1021	,
21	NN	1981 AGACTGCATTGTGACAGAGGATCAGCAAGTTGCGAGAGCTATTCCTTCGCCCAAGTGGATAG	1921 AGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGTGCACACAC	1991 GAACATACCAGGAGCACGGTCATTCAACCATGAGTACTGTCCAAGGCTTGCACTGTTGA	1801 TITIGUTEL GEGAAGGAATIGGAGTEA TITIGUTEL GEGAGGAGTAAGATTAGATTAGAGGAGGAAGGAGTAAGATACTTTGTATGTA	1741 GATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTAT	1681 1741	1621	1561	1501				1321 AGGCGTACTTCTGATTGTTTTGAATCCCGACCTGATGCACTTGTACAGATACCTTCACT	1 1 2 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11	1081 GGAIGCCIIGAAGCAMAIGIIACIACAAIGATGAGTTAGAGTATGAGAGGAGAAA 1141 TGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGAAA	1021	

300

```
Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 2
US-09-938-842A-1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                           멎
                                                                                                                 8
                                                                                                                                                             밁
                                                                                                                                                                                                á
멂
                          δ
                                                                                                                                                                                                                                                                                                                                 ; ORGANISM: Arabidopsis thaliana US-09-938-842A-1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1391, Application US/09938842A Patent No. US20020160378A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 5379
SEQ ID NO 1391
LENGTH: 2154
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Harper, Jeff
APPLICANT: Wang, Xun
APPLICANT: Wang, Xun
APPLICANT: Wang, Xun
APPLICANT: Wang, Xun
APPLICANT: Jhu, Tong
TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
TITLE OF INVENTION: SAME, AND METHODS OF USE
FILE REFERENCE: SCRIPI300-3
CURRENT FILING DATE: 2001-08-24
PRIOR APPLICATION NUMBER: US 60/227,866
PRIOR FILING DATE: 2000-08-24
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR FILING DATE: 2001-06-2
PRIOR FILING DATE: 2001-06-22
NUMBER OF SECTION NUMBER: US 60/300,111
PRIOR FILING DATE: 2001-06-22
NUMBER OF SECTION NUMBER: US 60/300,111
                                                                                                                                                                                                                                                 Matches 2154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2101 TGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGGGTCGAAGG 2160
                                     227
                                                                                                                                                                                                         107 ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG 166
                                                                               61
                                                                                                                                                               ۰
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TIGIAAGCTACCIACACATTICIGATCTTATCAAGATACTACTACTTTC 2571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTCGACGAGAGACAATGG 2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCACTTAGTCTTGCTCATAAGTACGATGAAGAACATTTAATTAGCTTCTTCTTGTCA 2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCGCTTATGTAGTGGTTTTGATTTAGGGTTAGGATTGCACCAAAAATAAGATCCACTTT 2460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAAACAAGACTTCCGAGTGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTACTTACAACGAGATGGATAATGAGGAGAAAAGGACAAGTTGTCGACGGAGACAATGG
CTGTGTGAACAGCTTGCGGATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT
                        CTGTGTGAACAGCTTGCGGAATTAAACTCCGGATGGATTTGAGGTGATATTGGTGTCATCT
                                                                                                                       GTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA 226
                                                                                                                                                                 ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTGTAAGCTACCTACACATTTCTGATCTTTATCAAGATACTACTACTTTTC 2571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCACTTAGTCTTGCTCATAAGTACGATGAAGAACATTTAATTAGCTTCTCTTGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTCGCTTATGTAGTGGTTTTGATTTAGGGTTAGGATTGCACCAAAAATAAGATCCACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTGTGTATTTGGTTGAGACTTGAGGAGAGAGACACAGAGGAGGATGGGCTTTTTTGTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTTGTGTATTTGGTTGAGACTTGAGGAGAGAGACAGAGGAGGATGGGCTTTTTTGTTTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAAACAAGACTTCCGAGTGTGTG
                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                 83.8%; Score 2154;
100.0%; Pred. No. 0;
                                                                                                                                                                                                                                                 0; Mismatches
                                                                                                                                                                                                                                                                                         DB 9; Length 2154;
                                                                                                                                                                                                                                                 0; Indels
                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2280
    180
                                          286
                                                                                 120
                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                        밁
                                                                                                                                             Ş
                                                                                                                                                                                       뮍
                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            B
                                                  S
                                                                1307
                                                                                                                                                                                       1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTCTGGTGAATGACAGTAGTTTTÄGÄGÄCAAGGATTTCÄGGÄÄĞCAÄCTTAATGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATTAGCAGCTTT 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATT 1066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGC 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT 526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>ÁGCAGTCTTÁTGGCTTACTÁTGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA
                          ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTA
                                                                                                                                                                                                                                                                                                                                                           CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG
                                                                                                                                                                                                                                                                                                                                                                                               стдеттдататтдессдатдессттдаадсааатдттастасаатсааадстдадаатдад
                                                                                                                                                                                                                                                                                                                                                                                                                                             CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCAAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT
                                                ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTA
                                                                                                                                                  GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG
                                                                                                                                                                                          TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT
                                                                                                                                                                                                                                                                                                             TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGCCAGTT 1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      СТТТАСАСАGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA 766
                                                                                                          GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG
```

946

840

780 886 720 826 660

1246

1080

1020 1126 960

900

1140

1260

1366

1200

1306

540

420

480

360

```
RESULT 3
US-09-938-842A-1391
                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                 Sequence 1391, Application US/09938842A
Publication No. US20040009476A9
GENERAL INFORMATION:
APPLICANT: Harper, Jeff
APPLICANT: Kreps, Joel
APPLICANT: Kreps, Joel
APPLICANT: Wang, Xun
APPLICANT: Zhu, Tong
TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
TITLE OF INVENTION: SAME, AND METHODS OF USE
FILE REFERENCE: SCRIP1300-3
                                                                                                                                                                                                                                                                                                                                                                                                                                            1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1321
                                                                                                                                                                                                                                                                                 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1367
                                                                                                                                                                                                                                                                                                         GACGGAGACAATGGAATTGTTTACACCCCATCAGGACATTCCCATCCCAAGCTTAA 2260
                                                                                                                                                                                                                                                                                                                                                                                       GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                            CGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT 2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTTGCACTGTTGAAGTTGTAGAAGACGTTTTATGGTGCTATAGATCACATTCACCGACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAA 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG 1426
                                                                                                                                                                                                                                                                                 GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGCCAAGTGGATAGCGCTGCTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGCCAAGTGGATAGCGCTGCTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC 2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAGCCTGTAATGCGATGGAAACCCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTTGGACTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGGCTTGTGATACGGATATGGCAAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GATGACGTTATCGATCTTGTGATCCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 1500
                                                                                                                                                                                                                                                                                                                                                                                                    2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1860
                                                                                                                                                                                                                                                                                                                                                                                                                                            2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1320
                                                                                                                                                                                                                                                                                                                                                                2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                     Ş
                                                                                                                                          밁
                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                 뮍
                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                           밁
                                                                                               Ś
                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-938-842A-1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION NUMBER: US/09/938,842A
CURRENT FILING DATE: 2001-08-24
PRIOR APPLICATION NUMBER: US 60/227,866
PRIOR FILLING DATE: 2000-08-24
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR FILLING DATE: 2001-01-16
PRIOR APPLICATION NUMBER: US 60/300,111
PRIOR FILLING DATE: 2001-06-22
NUMBER: OF SEQ ID NOS: 5379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 2154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID NO 1391
LENGTH: 2154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity
                       887
                                                                                                                                            661
                                                                                                                                                                                                                        109
                                                                                                                                                                                                                                                                                                     541
                                                                                                                                                                                                                                                                                                                                           647
                                                                                                                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     107 ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG
                                                             721
                                                                                                   827
                                                                                                                                                                                767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          167 GTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTTGGTCGTTTAGGAGCA 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ц
                         GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT
                                                                                                                                                                                                                                                                                                                                         GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTTGGTCGTTTAGGAGCA
                                                                                       GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT
                                                                                                                                          AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACT
                                                                                                                                                                                                                                                                                                     GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGT
                                                                                                                                                                                                                                                                                                                                                                                   ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                               ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGCTGTTTGGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTTGGACAA 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGGAGGAGCTAGATCGTTCACGTGCTTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG
                                                               GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT
                                                                                                                                                                                AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACT
                                                                                                                                                                                                                                                              CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT 526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGCAGTCTTATGGCTTACTATGAGACTATGTTTTGACCAGCTTGATGTGACGGCAGCTCAA 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT
                                                                                                                                                                                                                        CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA
    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83.8%; Score 2154; DB 11; 100.0%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 2154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
```

240

180 286

360

946

886

826 660

720

766

706

600

646 480 586 420

540

120

60 166

```
1741
                                                                                                                                                                                                                                                                        1847
                                                                                                                                                                                                                                                                                                                                                                                                                                      1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1067
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1141 GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    781 GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT 840
                                        GGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT 2026
GGGAGTGCACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT 1920
                                                                                                                                          GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT 1966
                                                                                                                                                                                                            GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
                                                                                                                                                                                                                                                                  GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG
                                                                                                                                                                                                                                                                                                                         CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG
                                                                                                                                                                                                                                                                                                                                                         CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGCCTGTAATGCGATGGAAACCCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG 1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA 1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAA 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAAGAAGATTCCTGATTTGCTTAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTA 1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT 1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGATAGOTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTA 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATT 1066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAG 1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG
                                                                                                       1860
                                                                                                                                                                                                               1800
                                                                                                                                                                                                                                                                  1906
                                                                                                                                                                                                                                                                                                                         1740
                                                                                                                                                                                                                                                                                                                                                                          1846
                                                                                                                                                                                                                                                                                                                                                                                                                                 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  960
```

g Ş 뭐 Ś B Ş 밁 Ś 밁 S 유 S 뭐 Ś 뮍 Ś 밁 Ś 片 Ś 밁 Ś 밁 8 片 Ş 밁 Ś 片 Ś 跊 S 밁 á 뮍

AGCAGTCTCATGGCTTACTATGAGACTATGTTTGACCAGTTGGATGTGACGGTTGCTCAA 360

```
APPLICANT: HATGER, Joel
APPLICANT: Wang, Xun
APPLICANT: Wang, Xun
APPLICANT: Zhu, Tong
TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
TITLE OF INVENTION: STRESS-REGULATED SOF USE
FILE REFERENCE: SCRIP1300-3
CURRENT APPLICATION NUMBER: US/09/938,842A
CURRENT FILING DATE: 2001-08-24
PRIOR APPLICATION NUMBER: US 60/227,866
PRIOR APPLICATION NUMBER: US 60/227,866
PRIOR APPLICATION NUMBER: US 60/227,866
PRIOR APPLICATION NUMBER: US 60/227,866
PRIOR APPLICATION NUMBER: US 60/201,111
PRIOR FILING DATE: 2001-01-16
PRIOR FILING DATE: 2001-06-22
NUMBER OF SEQ ID NOS: 5379
SEQ ID NO 1866
LENGTH: 2181
TYPE: DNA
ORGANISM: Arabidopsis thaliana
US-09-938-842A-1866
밁
                                   8
                                                                                          片
                                                                                                                                   Ś
                                                                                                                                                                                     片
                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                  F
                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-938-842A-1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; Sequence 1866, Application US/09938842A; Patent No. US20020160378A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 1848; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2027
                                          407
                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                             167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                107 ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                           AGCAGTCTTATGGCTTACTATGAGACTATGTTTTGACCAGCTTGATGTGACGGCAGCTCAA 466
                                                                                                                                                                                                                                                                                                                                                                                                           GTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA 226
                                                                                                                      GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA
                                                                                                                                                                                                                                                                                  ATCTGTGAACAGCTTGCGGAGTTAAAACTCAGATGGATTTTGAGGTCATTTTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                               CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGACGGAGATCGATCGTTCACGCGCGTTCGCCAAAGACGTTAAGCGTATCGTCGTCAAG
                                                                                          GCAGATTTACAGAAGCCACAAATGGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGGCAG 300
                                                                                                                                                                                       GGTGCCGTTGGTCTTGGTCGACAAAGGCTTCGATACAGACAATTAGTCAACAGCAGTTTT
                                                                                                                                                                                                                                GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                             GTTGGGACTGCAGTTGTTACTGGGAAAGGTGGAAGATTGGCTCTTGGACGTTTAGGAGCT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC 2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTCGGGGTCGAAGGATTACTTACAACGAGGATGGATAATGAGAGGAAAAGGACAAGTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGCAGGATCCATGCTCGTGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA 2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                64.9%; Score 1669.8; DB 9; Length 2181;
86.2%; Pred. No. 0;
tive 0; Mismatches 297; Indels 0;
                                                                                                                                                                                                                                     346
                                                                                                                                                                                     240
                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                               286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
```

유

유 성

CHARTITINGARATIAGGANTTCAGGANGCANCTTAGTGANACT	1487 GGGGTAAACT 1381 GGAGGTAAACT 1547 GATGACGTTAT	1427 GCCCGGCGATC 1321 GCTCGTCGATC	1367 CAGATAGCTTC	1307 ACCTCATCACC	1247 GATCCAATCGGC 1141 GATCCAATAGGC	1187 ATGACACCTGG 1081 ATGAAGCCTGG	1127 TTAGATGTAGC	1067 CTGCTTGATATTG	1007 GCTGCGAGGGAAAGT 	947 CATCAAGATGC	887 GGGTATTCAGC 	827 GCAAAAGTCAAAGCTGC 721 GCAAAAGTTAAAGCTGC	767 AAACATCAAGA 661 AAACACCAGGA	707 CTTTACACAGG	647 GCTCTACTGGC 541 GCTCTTCTGTC	587 ACCCGAAGAGC 	527 GTCAAGTCTAI	361 ATGCTTGTGAC
586 646 670 660 660 660 660 660 660 660 660 66	ATTGGACTTGTGACTTCAAGAGAAGAGATTCCTGATTTGC 	AAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAC 	CCATCCGTAGTGGAAATGGTC AATCCGGAGTGGAAATGGTC	TGATTGTTTTTGAATCCCGACCTG	$\alpha - \alpha$	CAGCTTCAG CAGCTTCCG	ACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCA CAAGAAGCTGGATATGAAGAGTCTTTGGTAGCTCC	CCGATGCCCTTGAAGCAAATGTTACTACAATCAAA 	TTCCAGAAAGCTTCAGG	0-0	CTCAGAGGACTACGTGTTGGAAC	agctgcagtcaatgcagcttatgctgggattcctgtcatcat) 	IGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGAGGGGG 	CCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGT	GTTGGAAGCTGAAGCTGATCTTCTGATTCTTCTGAGCGATGT 	CCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAG 	gcttgatttgagggttattccaattttcaatgagaatgatgc -	CGATAGCAGTTTTAGAGATAAGGATTTCAGGAAGCAACTTAG
	AAGCTT 154 AAGCTT 144 ATAAAA 160	1 14 13	14	13 12	12	12	11	11 10	10 96	90	84 4	78	1 82	76	70	CTTAGCT 64	1U 4a	42

```
벍
                                          Ś
                                                                                      밁
                                                                                                                          S
                                                                                                                                                                                                            Š
                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                        1861
                                              2207
                                                                                                                                                                        1981
                                                                                                                                                                                                              2087
                                                                                                                                                                                                                                                                                              2027
                                                                                                                                                                                                                                                                                                                                                                                                                          1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1667
2101 GATGGAGACAATGGAATCGTTTACACCCATAAGGATCTTCCTGTC 2145
                                                                                                                                                                                                                                                                                                                                                                                  1967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1607 AATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1441 GATGACGTTATTGATCTTGTGATCCCAAGAGGCAACAAGCTTGTTTCTCAAATAAAA
                                          GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCCATC 2251
                                                                                      GTTGGAGTTGAAGGATTATTGACAACAAGATGGATAATGAGAGGAAAGGGACAAGTTGTG
                                                                                                                     GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTC 2206
                                                                                                                                                                        AGGTTCGGACTTGGTGCTGAGGTGGGAATAAGCACAAGCAGGATTCATGCCCGTGGTCCA
                                                                                                                                                                                                            CGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA 2146
                                                                                                                                                                                                                                                                                                                                                                       GGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ĠĊŊĀĠŤĠĊĄĀŖĀĊŤĠĀĀŢĀŤŦĊĊĠĠĀĀŖĊĄĄŖŤĊĄŤŤŦĊĄĊĊĄĊĠĄĠŤŖĊĄĠŦŦĊĊĄĄĠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG 1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGTCTGGTAAACTGGACATGGCAAAGCGCATTGTTTCCGATGCAAAGTTGGACTATCCA
                                                                                                                                                                                                                                                                                              CGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCAAGATTCTCAGATGGTTTC 2086
                                                                                                                                                                                                                                                                                                                                      GGAAGTGCACACACTGATTGCATAGTGACGGAAGATAGTGAAGTAGCAGAAATATTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTGCACCGTTGAAATTGTAGAAGACGTATATGGTGCTATAGATCATATTCACCAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT 1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG 1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAGCCTGTAATGCGATGGAAACCCCTTCTTGTACATAAAGATTTGGAGCAGAATGGTTTT 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA 1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACTCGACGAAAATCCCAGTGCTAGGCCATGCTGATGGAATCTGTCATGTATATGTTGAT 1560
                                                                                                                                                                                                                                                    CGCCAAGTGGACAGTGCTGTTTTCCACAATGCAAGCACAAGATTCTCTGATGGTTTT 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTCGATGATCTTATTTATGTTCTGCAAACCAAAGGCGTCACTTTGTATGGTGGGCCAAGA 1740
                                                                                      2100
                                                                                                                                                                                                                                                                                                                                        1920
                                                                                                                                                                                                                                                                                                                                                                              2026
                                                                                                                                                                                                                                                                                                                                                                                                                        1860
                                                                                                                                                                      2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1666
```

8 8 8 8 8 8 8

```
US-09-938-842A-1866
; Sequence 1866, Application US/09938842A
; Publication No. US20040009476A9
; GENERAL INFORMATION:
APPLICANT: Harper, Jeff
APPLICANT: Harper, Joel
APPLICANT: Wang, Xun
APPLICANT: Wang, Xun
APPLICANT: Zhu, Tong
: TITLE OF INVENTION: SIRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
: TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
: TITLE OF INVENTION: SAME, AND METHODS OF USE
: FILL REFERENCE: SCALEJ300-3
; CURRENT APPLICATION NUMBER: US/09/938,842A
; CURRENT APPLICATION NUMBER: US/09/938,842A
; PRIOR APPLICATION NUMBER: US/09/938,842A
; PRIOR APPLICATION NUMBER: US/09/938,842A
; PRIOR APPLICATION NUMBER: US/09/938,842A
; PRIOR APPLICATION NUMBER: US/09/938,842A
; PRIOR APPLICATION NUMBER: US/09/938,842A
; PRIOR APPLICATION NUMBER: US/09/938,842A
; PRIOR FILING DATE: 2001-08-24
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION NUMBER: US/09/938,942A
; PRIOR APPLICATION UMBER: US/09/938,942A
; PRIOR APPLICATION UMBER: US/09/938,942A
; PRIOR APPLICATION UMBER: US/09/938,942A
; PRIOR APPLICATION UMBER: US/09/938,942A
; PRIOR APPLICATION UMBER: US/09/938,942A
; PRIOR APPLICATION UMBER: US/09/938,942A
; PRIOR APPLICATION UMBER: US/09/938,942A
; PRIOR APPLICATION UMBER: US/09/938,942A
; PRIOR APPLICATION UMBER: US/09/938
```

8 8 8 8 8 8 8

片

S

1260 1366 1140 1246

1080

1200 1306

1380

1440

```
ᅡ
     ဌ
                                    δ
                                                                                                     밁
                                                                                                                                                  Ś
                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                     뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      뭉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-938-842A-1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 86.2
Matches 1848; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                     1067
                                                                                                                                                          1007
     961
                                                                                                        901
                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                947
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                     781
                                                                                                                                                                                                                                                                                                                                                                        887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                             721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241 GCAGATTTACAGAAGCCACAAATGGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            227 CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 GTTGGGACTGCAGTTGTTACTGGGAAAGGTGGAAGATTGGCTCTTGGACGTTTAGGAGCT 120

    Argaccicacicción carecicación de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica de la propertica del la propertica de la propertica della propertica della propertica della propertica della propertica della propertica della propertica della propertica della propertica della propertica della propert
                                       CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAGCTGAGAATGAG 1126
                                                                                                                                                                                                                                               CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT 1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTCTTCTGTCGCTAGAGCTGAAAGCTGATCTTTTGATTCTTCTAAGTGATGTTGAGGGC 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATGCTTGTGACCGATAGCAGTTTTAGAGATAAGGATTTCAGGAAGCAACTTAGTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTCTGGTGAAIGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT 526
CTACACGACATTGCCAATGCCCTTGAAGTAAATGAGAAAACAATTAAAGCTGAGAATGAT 1020
                                                                                                                                                       GCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATT 1066
                                                                                                                                                                                                                                                                                                               GGATATGCAGCTGAGAATATAAGTAAAGTCCTTAGAGGACTGCGTGTTGGTACCCTGTTC 840
                                                                                                                                                                                                                                                                                                                                                    GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT 946
                                                                                                                                                                                                                                                                                                                                                                                                                        GCAAAAAGTTAAAGCTGCTGTTAATGCAGCTTATGGTGGCGTTCCTGTTATCATAACCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGT 886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACT 826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTTACACAGGCCCTCCAAGTGATCCTAAACTCAAAGTTGATCCACACTTTTGTTAAAGAA 766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGC
                                                                                                                                                                                                       CATCAAGATGCTCATTTATGGGCTCCGGTCGTAGATACTACTTCTCGTGACATGGCAGTT 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAACACCAGGACGAGATTACTTTTGGCGAAAAGTCCAAATTAGGACGAGGGGGTATGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGT 706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACTCGCAGAGCCCCCTACAAGGATTCTACTGGTATATTTTGGGATAATGACAGCTTAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCCGAAGAGCCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT 646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTCAAAGCGATGCTGAGGATGAGGGTTATTCCAGTTTTCAATGAGAATGATGATATAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGCAGTCTCATGGCTTACTATGAGACTATGTTTGACCAGTTGGATGTGACGGTTGCTCAA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ĠĠŦĠĊĊĠŦŦĠĠŦĊŦŦĠĠŦĊĠAĊAAAĠĠĊŦŦĊĠAŦACAĠAĊAAŦŦĀĠŦĊAĀCĀĠĊĀĠŦŦŦŦ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATCTGTGAACAGCTTGCGGAGTTAAACTCAGATGGATTTGAGGTCATTTTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTGGGACAGCAGTTGTTACTGGAAAAAGGTGGAAAGATTGGCTCTTGGTCGTTTAGGAGCA 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64.9%; Score 1669.8; DB 11; Length 2181; 86.2%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches 297; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Gaps
                                                                                                        960
                                                                                                                                                                                                                                                                                                                                                                                                                          780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                286
                      뮍
                                                             S
                                                                                                                              먉
                                                                                                                                                                      S
                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           몽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1501
                                                                   2147 GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAGGAAAAGGACAAGTTGTC 2206
                                                                                                                                                                                                                                                                                                                                            1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1547
                      2041 GTTGGAGTTGAAGGATTATTGACAACAAGATGGATAATGAGAGGAAAAGGGACAAGTTGTG
                                                                                                                                                                                                                                                                                                                                                                                              1967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1741 GCAAGTGCAAAACTGAATATTCCGGAAAACAAAATCATTTCACCACGAGTACAGTTCCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1127 TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT 1186
                                                                                                                                                                   CGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCA 2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT 1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG 1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGTCTGGTAAACTGGACATGGCAAAGCGCATTGTTTCCGATGCAAAGTTGGACTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGGTTCGGACTTGGTGCTGAGGTGGGAATAAGCACAAGCAGGATTCATGCCCGTGGTCCA
                                                                                                                                                                                                                                   CGCCAAGTGGACAGTGCTGCTTTTCCACAATGCAAGCACAAGATTCTCTGATGGTTTT
                                                                                                                                                                                                                                                                                   CGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCAAGATTCTCAGATGGTTTC 2086
                                                                                                                                                                                                                                                                                                                                         GGAAGTGCACACACTGATTGCATAGTGACGGAAGATAGTGAAGTAGCAGAAATATTCCTC 1920
                                                                                                                                                                                                                                                                                                                                                                                           GGGAGTGCACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCTGCACCGTTGAAATTGTAGAAGACGTATATGGTGCTATAGATCATATTCACCAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG 1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCGATGATCTTATTTATGTTCTGCAAACCAAAGGCGTCACTTTGTATGGTGGGCCAAGA 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCAGCCTGTAATGCGATGGAAACCCCTTCTTGTACATAAAGATTTGGAGCAGAATGGTTTT 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGGCTTGTGATACGGATATGGCAAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA 1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGACGTTATTGATCTTGTGATCCCAAGAGGCAGCAACAAGCTTGTTTCTCAAATAAAA 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAA 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGGTATCTTCGCTTGCAATCCGGAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTTAGAGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGAAGCCTGGGAAGATCTCAAGCCTTGCAGCTTCCGTTCGCCAGCTAGCCGAAATGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AACTCGACGAAAATCCCAGTGCTAGGCCATGCTGATGGAATCTGTCATGTATATGTTGAT 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAGGTAAACTCATAGGACTTGTGACCTCAAGAGAGGAGATTCCTGATTTGCTCAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTCGTCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCGGAGACTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCTCATCACCAATAGGTGTTCTTCTGATTGTTTTTGAATCCCGGCCTGATGCACTTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATCCAATAGGCCGTGTATTAAAGAAAACTCAGGTTGCAGATGATCTTATTTTAGAGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTAGATGTTGCTGCAGCACAAGAAGCTGGATATGAAGAGTCTTTGGTAGCTCGCTTAGTT
```

2100

2040

1980

2026 1860 1800

```
밁
                                                                                          Ś
                                                                                                                                          밁
                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                     뭥
                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 6
US-10-424-599-44242
; Sequence 44242, Application US/10424599
; Publication No. US20040031072A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; OTHER INFORMATION: Clone ID: PAT_MRT3847_139949C.1
US-10-424-599-44242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REPRIVE: 38-21(5323)B
CURRENT APPLICATION NUMBER: US/10/424,599
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 44242
LENGTH: 2499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 45.5%; Score 1170.4; DB 12; Length 2499; Best Local Similarity 71.4%; Pred. No. 0; Matches 1590; Conservative 0; Mismatches 591; Indels 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: La Rosa Thomas J
APPLICANT: Kovalic David K
APPLICANT: Zhou Yihua
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: DNA
ORGANISM: Glycine max
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2101 GATGGAGACAATGGAATCGTTTACACCCATAAGGATCTTCCTGTC 2145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2207 GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATC 2251
                                                                                                                                                                                                                                       475
                                                                                                                                                                                                                                                                                                                               415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         343 CITTGCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGGAAGGCTTGTGGTGTTTGG
         703
                                                                                                 643
                                                                                                                                                                     583 TAGCACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTT 642
                                                                                                                                                                                                                                                                                   523
                                                                                                                                                                                                                                                                                                                                                                           463
                                                                                                                                                                                                                                                                                                                                                                                                                       355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                175 GGCACTCTGTGAGCAGATTAAGGAGCTGAATTCTCTTGGTTATGAGATTATTTTGGTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               283 АТСТЭСТӨСӨӨТГӨӨТСТТӨӨСАӨӨСАААӨӨСТТСӨТТАТСӨАСААТТАӨТСААТАӨСАӨ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            163 TAAGGTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            103 GATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGT 162
                                                                                            AGCTGCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGA 702
                                                                                                                                                                                                                                  AACTATGAAATCATTGTTAGCATTAAAAGTTATTCCCCATATTCAACGAGAACGATGCAGT
                                                                                                                                                                                                                                                                  AACTGTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTTCAATGAGAATGATGCTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAAGGTTGGGÁCTGCTGGTGACTCGCCAAGATGGAAGGTTAGCTGTTGGAAAATTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGTATGGAGAACACAGATCCTTGTAGACATTTTCTCAAGGATGTTAAGCGCATCATAAT 114
                                                ATCAGCTTTATTGGCATTGGAATTAAAAGCTGATCTTCTTATTTTGTTGAGTGATGTAGA 654
                                                                                                                                                                                                                                                                                                                          TCAGCTTCTTGTGACGGACAATGATTTTAGAGACAAAGATTTCAGAATGCAGCTCAGCGA
    AGGTCTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAA 762
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACAAAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGC 462
                                                                                                                                                                                                                                                                                                                                                                        TCAACTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGA 522
                                                                                                                                                                                                                                                                                                                                                                                                                       ACAAAACAGCCTTATGGCTCTTTATGATGTTTTGTTTTAGTCAGCTGGATGTGACATCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTTGCTGACCTTCAGAAGCCGCAAGTTGAACTTGATGGCAAGGCTTGTGCTGCTGCTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          45; Gaps
                                                                                                                                                                                                                                  534
                                                                                                                                                                                                                                                                                                                            474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            282
                                                                                                                                                                                                                                                                                                                                                                                                                       414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        174
                                                                                                                S
                                                                                                                                                                밁
                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                      밁
                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1357
1783 TGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACC 1842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1363
                                                                                                                  1723 TCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGC
                                                                                                                                                                                                                                                                                                    1603 AAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGT 1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    835 TAGTGGTTATGCAGCTGAAAATATCATTAAAGTTCTCCAAGGACAACGGATTGGAACCCT 894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  763 AGAAAAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTAT 822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGATAAATCTGCTGATCTGGAGATGGCAAGGCGGATTGTACTAGATGCAAAAATAGACTA
                                                                      TCCAGCAGGCTGCAATGCCATGGAAACTCTTCTTGTTCACAAGGACTTGGTAGAGAAAGG
                                                                                                                                                                                                          CGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTA
                                                                                                                                                                                                                                                                                                                                                                                         GCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGAT 1602
                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTTGGCTCAAAACTTATTGGACTTGTGACATCAAGAGCAGAAATTCCTGAGCTACTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGTTGGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAAGAGATTCCTGATTTGCTTAA 1542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGAC 1482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTACAGATAGCTTCTTTGGCAATCCGAAGTGGGAATGGGCTTCTCTTGAAAGGAGGCAA 1356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAA 1422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAAACATCATCTTTAGGAGTTCTTTTAATTGTTTTTTGAGTCTCGCCCTGATGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAAGATCCAATTGGTCGAGTGTTAAAACGAACTGAGCTTGCAGAGGGGCTGATTTTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGA 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTT 1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATTTTGCTAAAAATAGCTGATGCCCTGGAAGCACATCAAAATGAGATCAGGATTGAAAA 1074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAA 1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAA 1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGC 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGTGGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACTGCTAAAGTAAAAGGCTTCTATTCATGCAGCTGAAGCTGGCATTCCTGTTATCATTAC 834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GACTGCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAAC 882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAAAAAGCATCAAAGTGAAATTACTTTTGGAGACAAGTCTAGAGTGGGAAGAGGTGGAAT
                                                                                                                                                                                                                                                                                                                                                  GTTGGATGATGTAATTGATCTAGTGATTCCAAGAGGCAGCAACAAACTTGTCACTCAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGGCTAAGCGATCAAATGCAATTTTGCACAAAGTAATTACTGAAGCCATACCAGATAT 1416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----CTAGACTGCTTGCAAGCCTTGCTAACAACATTCGAATTATTGCAAACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGTTGCAGCTÁGGGACTGTTCCAGACGGCTTCÁGGCCTTÁTCTTCAGAAGAGGAAGACÁ 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTCCATAAAGATGCACATAAATGGGCCCCCGGTAAAAGAGGGTTGATGCTCGTGAGATGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAAGCTGATGTTGCTGATGCAAAAGAAGCAGGATATGAAAAATCCTTGGTTG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1176
                                                                                                                                                                                                                                                        1596
                                                                                                                                                                                                                                                                                                                                                                                                                                            1476
                                                                                                                                                                   1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   774
                                                                                                                                                                                                                                                                                                                                                     1536
```

```
RESULT 7
US-10-026-767-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              윰
                                                                                                                                                                                        LENGTH: 2549
TYPE: DNA
ORGANISM: OYZA SATIVA L.
FEATURE:
NAME/KEY: CDS
LOCATION: 99..2249
PUBLICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Application US/10026767 Publication No. US20030014774A1
                                                                                                                                                                                                                                                                                                                                SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Japan International Research Center for Agricultural Science APPLICANT: Bio-oriented Technology Research Advancement Institute (BRAIN) TITLE OF INVENTION: Transgenic rice plant and its family with environmenta. TITLE OF INVENTION: stress resistant by proline accumulation of high leverance of INVENTION: production.

FILE REFERENCE: NTOLPO35 CURRENT APPLICATION NUMBER: US/10/026,767
CURRENT FILING DATE: 2001-12-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Hitachi, LTD. APPLICANT: RIKEN
                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQ ID
                                                                         AUTHORS: Yumiko Igarashi, Yoshu Yoshiba, Yukika Sanada, Kazuko AUTHORS: Yamaguchi-shinozaki, Keishiro Wada, Kazuo Shinozaki TITLE: Characterization of the gene for 1-pyrroline-5-carboxylate TITLE: synthetase and correlation between the expression of the gene and TITLE: salt tolerance in Oryza sativa L.
JOURNAL: Plant Molecular biology
  VOLUME: 33
PAGES: 857-865
DATE: 1996-12-03
DATABASE ACCESSION NUMBER: D49714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2257 GCTGCT 2262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAGAGACCTTGGGCTAAAGTTGTACAATTCAGTGGAGGAGGATATTTATGCTATCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACATGGGAG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTGGCATGCACAGTTGAAATTGTGGATGATGTTTATGCAGCTATTGATCATATAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAAGGCAAGTCCTTTGTTAAATATTCCAATGGCTCGTATGTTACATCATGAGTACAATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGGGCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGACT 2301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGGATAATGAGAGGAAAAGGACAAGTTGTCGACGGAGACAATGGAATTGTTTACACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTATGGAAGGCATGCCACTCTTTATTTCTTGATAATTGCACATACTGATTCCGTTGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGTACAAGCAGGATTCATGCTCGGGGTCCAGTAGGAGTTGATGGATTGTTAACAACCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTGTTTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAATGCTAGTACAAGATTCAGTGATGGGGCACGATTTGGACTAGGTGCAGAGGTTGGAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              {	t AGAAGATCATGAAGTAGCCAATGTGTTTCTACGCCAAGTAGACAGTGCTGCTGTTTTCCA}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGGCTCAATAGTATTATTGACCTACGGACAGAAGGTGTTACATTGTATGGAGGACC 1776
                                                                                                                                                                                                                                                                                                                                                     2001-12-27
3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCACACACAGACTGCATTGTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                             environmental of high level
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                                                                                                 its
                                                                                          Ş
                                                                                                                                                                                                             닭
                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                       맑
                                                                                                                                     밁
                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-026-767-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 1484;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DATABASE ENTRY DATE: 1995-03-16
                                                                                              1007
                    1067 CTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAG 1126
                                                                                                                                     939
                                                                                                                                                                                                               879
                                                                                                                                                                        947
                                                                                                                                                                                                                                                                                         819
                                                                                                                                                                                                                                                                                                                              827
                                                                                                                                                                                                                                                                                                                                                                     759
                                                                                                                                                                                                                                                                                                                                                                                                            767
                                                                                                                                                                                                                                                                                                                                                                                                                                               699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      527
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                   ACTAGAAAGGCTCCATATGAGGATTCATCTGGTATATTCTGGGATAATGACAGTTTAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTTGGACAA 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGGCGAGCGTCGACCCGTCCCGGAGCTTCGTGAGGGACGTGAAGCGCGTCATCATCAAG
                                                         GCCGCAAGAGATTGTTCAAGGCATCTACAGAATTTGTCATCAGAGGAACGAAAAAAAGATA
                                                                                              GCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATT 1066
                                                                                                                                     CACAAGAATGCGAATTTGTGGGAATCATCTAAGGATGTTAGTACTCGTGAGATGGCTGTT
                                                                                                                                                                        CATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTT
                                                                                                                                                                                                               GGGTTTGAAAATCGGAGCATTCTTAAAAGTTCTTCATGGGGAAAAAATTGGTACTCTCTTT
                                                                                                                                                                                                                                                    GGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTT
                                                                                                                                                                                                                                                                                       GCAAAAGTGAAGGCTGCTGTCTTGGCTTCAAATAGCGGCACACCTGTGGTTATTACAAGT
                                                                                                                                                                                                                                                                                                                            gcaaaagrcaaagcrgcagrcaargcagcrrargcrgggarrccrgrcarcaraaccagr
                                                                                                                                                                                                                                                                                                                                                                                                        AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGTATAGTGGTCCACCAAGTGAACCATCATCAAAAATCATACACACTTATATTAAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAA 766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGACTGTTGGCACTGGAAACTGAAAGCTGATCTCCTTATTCTGCTCAGTGATGTGGATGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTGAGCGATGTTGAAGGT 706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTGAGTCATTATTAGATCTTAAAGTTATACCAATATTTAATGAAAATGATGCCATCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTCTTGTCACCGACAGTGATTTTGAGAACCCAAAGTTCCGGGAGCAACTCACTGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCTGATCTGCAAAAGCCACAGATGGAGTTAGATGGAAAGGCTTGTGCCGCTGTTGGTCAG 398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTGCTGTTGGAGTGGGGCGACAGCGACTTAGGTACCGGAAGCTTGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGGGCACTGCAGTTGTCTCCAGACAAGATGGAAGATTGGCTTTGGGCAGGGTTGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTGGGACAGCAGTTGTTACTGGAAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGTGGACTGATGGCTCTTTACGATATGTTGTTTAACCAACTGGATGTCTCGTCATCTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGTGCGAGCAGGTTAAGGAACTGAACTCTTTAGGATACGAAGTGATTTTGGTCACCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          42.2%;
69.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 1085.6; DB 14
Pred. No. 0;
0; Mismatches 664;
=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 14; Length 2549,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                          1006
                                                                                                                                                                                                                                                    946
                                                                                                                                                                                                                                                                                         878
                                                                                                                                                                                                                                                                                                                              988
                                                                                                                                                                                                                                                                                                                                                                     818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          226
                                                                                                                                                                                                               938
                                                                                                                                                                                                                                                                                                                                                                                                                                               758
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8E9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 578
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    166
```

```
1427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1119 GCTGATGTAGCTGCGGCCCAAGTTGCTGGATATGAGAAGCCTTTGGTTGCTAGATTGACT 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1059 TTGCTAGATGTTGCAGATGCTTTGGAGGCAAATGAGGATTTAATAAGGTCTGAGAATGAA 1118
GTGGGTGTTGAAGGTCTCTTAACTACACGATGGATCTTGCGAGGACGTGGGCAAGTGGTG
                                                                                                                                                                                                                                                                                   CGATTIGGACTIGGIGCAGAGGTGGGGGTAAGCACGGCAGGATCCATGCTCGTGGTCCA 2146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACAT 1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTG 1786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCA 1726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCGTCAACTAAGATTCCTGTTCTTGGGCATGCTGATGGTATATGCCACGTATATATTGAC 1658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATACTACAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGAC 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATGATGTCATTGATCTTGTCACTCCAAGAGGAAGTAATAAGCTTGTCTCTCAAATCAAG 1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTC 2206
                                                                                                                                                                                      CGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATCCATGCCCGTGGACCA
                                                                                                                                                                                                                                                                                                                                                                                      CGCAGAGTTGATAGTGCTGCTGTATTTCATAATGCAAGTACGAGATTCTCTGATGGGGCT 2078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAAGTGCTCATACAGATTGTATCGTCACTACAGATGATAAGGTAGCAGAGACTTTTCTA 2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTT 2026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCTGCACTGTTGAGTTTGTTGATGATGATCAGTAGCAATTGACCATATTCATCGTTAT 1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGCACAAAGCTCTGGGATTTCCAAAAGCTGTTTCATTTCATCATGAGTATAGTTCTATG 1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAG 1906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTTGACGACATATTAGTAGCACTAAAAACAGAAGGAGTTAATATTTATGGTGGACCTATT 1838
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAGCCTGCAATGCAATGGAGACCTTACTAGTTCATAAGGATCTTATGAAGAGTCCAGGC 1778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATGACGITATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAA 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTT 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCCAGATGGTCTTGTCTTAGAGAAG 1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       АТСАСАССТССВАРАВСЕТССВАССТТСВАССТТСВСТВАСТВАССТВСТВАТАТССВА 1246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTT 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTC 2086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGG 1846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAATCAGCTGACATGGATATGGCAAAACTTATTGTAATGGATGCAAAAACTGATTACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGTGAAAAACTTATTGGCCTTGTTACAACTAGAGATGAGATCGCAGATTTGCTAAAGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTATCAGATCAAACACGATATTGCATAAGGTTATAACTGATGCTATTCCTCGTAATGTT 1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGATTGCATCTTTGGCAATTCGAAGTGGTAATGGTCTTCTCCTAAAAGGTGGAAAAGAA 1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAG 1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACATOTTGCCCATTAGGTGTTCTCTTAATTGTTTTTGAGTCCCGACCTGATGCCTTGGTT 1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTA 1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACCCTATAAACCAGATACTTAAAAAGACAGAGGTTGCTGATGATTAGTTCTTGAGAAA 1298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATAAAACCAGGAAAGATAGCAAGCCTTGCAAAATCTATTCGTACCCTTGCAAATATGGAA 1238
2198
```

유 성

B S 밁 S 뭕 S 밁 S 밁 S 片 S 밁 Ś 뮍 S 밁

성 음 성

8 B

밁

당 유

Ş

음 성 음

Ş

유 성 유 성 유

```
밁
                                                                                            片
                                        Ś
                                                                                                                                          8
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                   뮰
                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     占
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 8
US-10-424-599-44248/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-424-599-44248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: La Rosa Thomas J
APPLICANT: Kovalic David K
APPLICANT: Kovalic David K
APPLICANT: Zhou Yihua
APPLICANT: Zhou Yihua
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53223)B
CURRENT APPLICANTION UNMEBER: US/10/424,599
CURRENT APPLICANTION UNMEBER: US/10/424,599
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 44248
LENGTH: 2708
TYPE- NATOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 1568; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 44248, Application US/10424599 Publication No. US20040031072A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
ORGANISM: Glycine max
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OTHER INFORMATION: Clone ID: PAT_MRT3847_139954C.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                      2270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2207 GACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCCATCCAA 2254
2090 GCTTTATTGGCATTGGAATTAAAAGCTGATCTTCTTATTTTGTTGAGTGATGTAGAGGGT 2031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2450
                                                                                               2150 ACTAGGAAAGCTCCATATGAGGATTCTTCTGGCATATTTTGGGATAATGACAGTTTATCA 2091
                                                                                                                                                                                                    2210 ATGAAATCATTGTTAGCATTAAAAGTTATTCCCATATTCAACGAGAACGATGCAGTTAGT
                                                                                                                                                                                                                                                                                                                                                                                                        2330 AACAGCCTTATGGCTCTTTATGATGTTTTTGTTTTAGTCAGCTGGATGTGACATCTGCTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2510
                                                                                                                                                                                                                                                                                                                                                       467
                                                                                                                                                                                                                                                                                                                                                                                                                                                           407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2630 ATGGAGAACACAGATCCTTGTAGACATTTTCTCAAGGATGTTAAGCGCATCATAATCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2199 AATGGTGACAAGGATGTCGTGTACACCCATAAGAGTCTTCCTTTGCAA 2246
                                                                                                                                                                                                                                               527 GTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGATGCTATTAGC 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           347 GCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAA 406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      167 GTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCA 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        107 ATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAG 166
                                GCTCTACTGGCGTTGGAACTGAAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGT 706
                                                                                                                                                ACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCT 646
                                                                                                                                                                                                                                                                                                      CTTCTTGTGACGGACAATGATTTTAGAGACAAAGATTTCAGAATGCAGCTCAGCGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAA 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTCTGTGAGCAGATTAAGGAGCTGAATTCTCTTGGTTATGAGATTATTTTGGTGTCATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGACCTTCAGAAGCCGCAAGTTGAACTTGATGGCAAGGCTTGTGCTGCTGTTGGACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGATTTGAGGTGATATTTGGTGTCATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTGGGACTGCTGGTCACTCGCCAAGATGGAAGGTTAGCTGTTGGAAAATTAGGGGCA
                                                                                                                                                                                                                                                                                                                                                    CTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACT 526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     41.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches 558; Indels 150; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 1053.2; DB 12; Length 2708; Pred. No. 5.8e-308;
                                                                                                                                                                                                                                                                                                      2211
                                                                                                                                                                                                                                                                                                                                                                                                        2271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2511
```

```
1148
                                                                                                                                                                                                                                                                                                                                                                                                                                         1502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1328
1682 GATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGCG 1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1442 GCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAAACTCATT 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1322 GGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACTT 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1202 ATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAGCTGATATGGAAGATCCAATCGGCCGT 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1550 GATGCCCTGGAAGCACATCAAAATGAGATCAGGATTGAAAATGAAGCTGATGTTGCTGAT 1491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1268 GCAATCCGAAGTGGGAATGGGCTTCTCTTGAAAGGAGGCAAGGAGGCTAAGCGATCAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1082 GATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGTAGCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1022 ТССАGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAATTCTGCTTGATATTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1730 AATATCATTAAAGTTCTCCAAGGACAACGGATTGGAACCCTCTTCCATAAAGATGCACAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1790 TTCATCCTGCAAATTGGTTTTTCCTTGGTTCTGCCACATTTTÄGTGGTTÄTGCÄGCTGÄA 1731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       827
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAGTICTTTTAATTGTTTTTGAGTCTCGCCCTGATGCACTAGTACAGATAGCTTCTTTG 1269
                                                                                                                                                                                                                                                                                                                                                                                                                              GGACTTGTGACTTCAAGAGAAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGAT 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAATTTTGCACAAAGTAATTACTGAAGCCATACCAGATATTGTTGGCTCAAAACTTATT 1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAAGGAGGCCCGGCGATCAAAT 1441
                                                                 CCTGTCCTGGGTCATGCAGATGGAATTTGTCATGTCTATGTTGATAAATCTGCTGATCTG 969
                                                                                                                                  CCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATACG 1681
                                                                                                                                                                                                               CTAGTGATTCCAAGAGGCAGCAACAAACTTGTCACTCAGATCAAGAGTTCCACTAAAATT 1029
                                                                                                                                                                                                                                                                                    CTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAAATACTACAAAAATC 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTTGTCTTAGAGAAGACCTCATCACCATTA 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGAAAG 1201
                                                                                                                                                                                                                                                                                                                                                             GGACTTGTGACATCAAGAGCAGAAATTCCTGAGCTACTTAAGTTGGATGATGTAATTGAT 1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGTTAAAACGAACTGAGCTTGCAGAGGGGCTGATTTTGGAGAAAACATCATCTTCTTTA 1329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTGCAAGCCTTGCTAACAACATTCGAATTATTGCAAACATGGAAGATCCAATTGGTCGA 1389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ĠĊĀĀĀĀĠĀĀĠĊĀĠĠĀŤĀTĠĀĀĀĀĀŤĊCTŤĠĠŤŢĠ-------ĊŢĀĠĀĊŢĠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCAGACGGCTTCAGGCCTTATCTTCAGAAGAGAGGAAACAAATTTTGCTAAAAATAGCT 1551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAATGGGCCCCGGTAAAAGAGGTTGATGCTCGTGAGATGGCAGTTGCAGCTAGGGACTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAGT 1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAAACCTTGTTTCATCAAGATGCTCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATTTTAATTCCAAGAACACTATGAAATCCATTATTTATGCTACCCACTTTATGGTGATT 1791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTAAAGTAAAGGCTTCTATTCATGCAGCTGAAGCTGGCATTCCTGTTATCATTACTAGG 1851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACC--- 883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAGCATCAAAGTGAAATTACTTTTGGAGACAAGTCTAGAGTGGGAAGAGGTGGAATGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACT 826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               СТТТАСАСАЭЭСССТССААЭТЭАТССТААСТСААЭТЭТЭАТССАСАСТТТТЭТТАААЭА 766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ----AGTGGGTATTCAGCTGAG 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1671
```

```
S
                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           당
                                                      US-10-425-114-5243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
Sequence 5243, Application US/10425114
Publication No. US20040034888A1
                                                                                                                                                                                                                                                                                                                                                                                                             2075 TCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGCCAGGATCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1922 GTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAG------ 1971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1862 AACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGAA 1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1742 ATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTATT 1801
                                                                                                                                                              428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 968
                                                                                                                                                        GGACAAATAGTGGATGGTGACAAAGCAGTTAACTACACTCACAGAGACCTTTCTAT 373
                                                                                                                                                                                                      GGACAAGTTGTCGACGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCAT 2250
                                                                                                                                                                                                                                                                                                           GCTCGTGGTCCAGTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAA 2194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AATGTGTTTCTACGCCAAGTAGACAGTGCTGCTGTTTTCCACAATGCTAGTACAAGATTC
                                                                                                                                                                                                                                                       GCTCGGGGTCCAGTAGGAGTTGATGGATTGTTAACAACCAGATGGATTCTCAAAGGAAGT 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTGTTTCCACAACGCCAGCACAAGATTC
                                                                                                                                                                                                                                                                                                                                                               AGTGATGGGGCACGATTTGGACTAGGTGCAGAGGTTGGAATAAGTACAAGCAGGATTCAT 489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTTATTTCTTGATAATTGCACATACTGATTCCGTTGTTGCAGAAGATCATGAAGTAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTGTGGATGATGTTTÄTGCAGCTÄTTGÄTCÄTÄTAAÄTCTTTÄTGGAÄGGCATGCCACT 669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTGACCTACGGACAGAAGGTGTTACATTGTATGGAGGACCCAAGGCAAGTCCTTTGTTA 789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGCAAGTAAGATACTG 1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGGAAACTCTTCTTGTTCACAAGGACTTGGTAGAGAAAGGTTGGCTCAATAGTATTATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGATGGCAAGGCGGATTGTACTAGATGCAAAAATAGACTATCCAGCAGGCTGCAATGCC 909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -----TGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCA 2014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATATTCCAATGGCTCGTATGTTACATCATGAGTACAATTCGTTGGCATGCACAGTTGAA 729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         849
```

```
밁
                                   Ś
                                                                                                                                                                      US-10-425-114-5243
                                                                                                                                                                                                                                                         APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313)B
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT APPLICATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 5243
                                                                                   Matches 1474; Conservative
                                                                                                         Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Liu, Jingdong APPLICANT: Zhou, Yihua APPLICANT: Kovalic, Davi
                                                                                                                                                                                 FEATURE: OTHER INFORMATION: Clone ID: 700449031_FLI
                                                                                                                                                                                                                              ORGANISM: Zea mays
                                                                                                                                                                                                                                                    TYPE: DNA
                                                                                                       Local Similarity
                                      91 GACGACGACGACGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAA 150
4 GGCCÁTGGCCÁTGGCCÁTGGÁGACCGCCGÁTCCTGCCCGTGCATTCGTGÁAGGÁCGTCÁA 63
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zhou, Yihua
Kovalic, David K.
Screen, Steven E
Tabaska, Jack E
                                                                                                       40.8%;
                                                                                0;
                                                                                Score 1049.2; DB 12; Length Pred. No. 8.8e-307; 0; Mismatches 708; Indels
                                                                                0;
                                                                                Gaps
                                                                                0
```

8 8 8 8 8 8 8

중 음 용 음

Ś 밁 ঠ 밁 δ 밁 S 밁 Ś 밁 Ş 밁 S 皮 5 ద δ В S 멼 Ś B Ś

음 성 음

g Q	B 8	g S	g 49	g Qy	Db Qy	dg Qy	유	do dy	B 8	g Q	Qy db	φy	g g	g Q	φ φ	d dy	B &
1171 GGTGGCTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAA 1230	1111 CAAAGCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAAT 1170	1051 AGACAGGAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAAT 1110	991 TCGTGACATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGA 1050	931 TGTTGGAACCTTGTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGC 990	871 TGTCATCATAACCAGTGGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACG 930	B11 GAGAGGGGGTATGACTGCAAAAGTCAAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCC 870	751 CACTTTIGTTAAAGAAAAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGG 810	691 GAGCGATGTTGAAGGTCTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCA 750 	631 TAACGATAGCTTAGCTGCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCT 690	571 GAATGATGCTATTAGCACCCGAAGAGCCCCATATCAGGATTCTTCTGGGTATTTTCTGGGA 630	511 GCAACTTAATGAAACTGTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGA 570	451 TGTGACGGCAGCTCAACTTCTGGTGAATGACAGTAGTTTTAGAGAACAAGGATTTCAGGAA 510	391 TGCTGGTGTTGGACAAAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGA 450	331 AGTCAATAGCAGCTTTGCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAÁGGCTTG 390	271 GATATTGGTGTCATCTGGTGCGGTTGGTCTTGGCAĞGCAAAGGCTTCGTTATCGACAATT 330	211 TGGTCGTTTAGGAGCACTGTGTGAACAGCTTGCGGAATTAAACTCGGATGGAT	151 ACGTATCGTCGTTAAGGTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCT 210
·			,						***************************************							,	
₽ \$? ₽ \$	Q B 4	S B &	S B &	S B 8	B &	P &	S B &	?		S A S	S & 8	\$ \$ \$	S B &	} ₽ \$	S & &	}
	04 TAGTGGACAAGTGGTGAATGGTGACAAGGGAGGGTGGTTTACACCCACAAGGATCTTCCTTT			1 19CAGNAGA TA CELLAGA CANALAGA TA CANALAGA CANA	1951 TCACATTCACCACATGGGAGTGCACACACACACACGCATTCTGACAGAGGATCACGAAGT 2010	1 ISASIACISIC CAMBELLIUS ACIDE ISASSASSIS IASSASSI IASSASSI IASSASSI IASSASSI IASSASSI IASSASSI IASSASSI IASSAS IASSASSI IASSA	TRANSPORTED TO SECOND CONTROL OF THE CANAGE TO SECOND CONTROL		TAMOSI SENCIAI CONSCINE SEGMI	1 1 AND THE CONTRACT OF CONCERN OF THE CONTRACT OF THE CONTRAC	1 191 18C1 CASATAMAMATAK LACAMAMATICC STG LAVAS ICATGE STATESTATICTS 04 AGTCTCCCAAATCAAAGCAACAACTAAGATTCCAGTTTTTAGGTCATGCTGATGGTATCTTG 05 AGTCTCCCCAAATCAAAGCAACAACTAAGATTCCAGTTTTTAGGTCATGCTGATGGTATCTTG	31 TOWNTOCKET NAME OF THAT CHARGE THAT CHARGE THAT CHARGE THE THAT CHARGE THE THAT CHARGE THAT CHARGE THAT CHARGE THE THAT CHARGE THAT	ANTIC CASAGAR IS I I GOOGGI FANNI I CHI I GENCII I GI GACLI CAFASHANGAGAI I CC		THE PROPERTY OF A CONTROL OF THE PROPERTY OF T	1 101101111111111111111111111111111111	44 AACTGCTGACATGGAGGACCCTATTTCCCATACATTGAAAAGAACAGAGGTTGCTAAAGA

1231 GCTAGCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGG 1290

RESULT 10

784

```
Sequence 4280, Application US/10425114
Publication No. US20040034888A1
GENERAL INFORMATION:
APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Tabaska, Jack E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement; FILE REFERENCE: 38-21(5313)8

CURRENT APPLICATION NUMBER: US/10/425,114

CURRENT FILING DATE: 2003-04-28

NUMBER OF SEQ ID NOS: 73128

SEQ ID NO 4280
LENGTH: 2418
TYPE: DNA
TYPE: DNA
CRCANISM: Zea mays
FEATURE:
COTHER INFORMATION: Clone ID: 700352413_FLI
US-10-425-114-4280
                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 먉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 융
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
S
                                                   밁
                                                                                                   δ
                                                                                                                                                         밁
                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-10-425-114-4280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 40.7%;
Best Local Similarity 67.5%;
Matches 1472; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven E
APPLICANT: Tabaska, Jack E
APPLICANT: Cao, Yongwei
                                                                                                                                                                                                                                                                  545
                                                                                                                                                                                                                                                                                                                     571
                                                                                                                                                                                                                                                                                                                                                                           485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          365 TGCTGCTGTTGGTCAAAGTGTCCTGATGGCGATCTATGACACATTATTTAGCCAACTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 305 TATCCATAGCAGCTTCGCAGATCTGCAAAATCCTCAGATGAACTTTGATGGAAAGGCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 331 AGTCAATAGCAGCTTTGCGGATCTTCAGAAGCCTCAGACTTGAACTTGATGGGAAGGCTTG 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          271 GATATTGGTGATCTGGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATT 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                185 GGGGAGGCTCGGTTCTCTCTGTGAACAGGTGAAGCAACTGAATTTTCAAGGGTATGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             125 GCGAATCATTATCAAGGTGGGCACGGCTGTTGTCACTGGCATGAATGGCCGATTGGCCAT
                                                                                                      691 GAGCGATGTTGAAGGTCTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCA 750
                                                                                                                                                                                                                                                                                                                                                                                                                           511 GCAACTTAATGAAACTGTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGA 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         151 ACGTATCGTCGTTAAGGTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCT
  751 CACTTTTGTTAAAGAAAAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGG 810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  91 GACGACGACGACGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAA 150
                                                     TAGTGATGTGGAAGGACTCTATAGTGGTCCACCAAGCGATCCTCAGTCAAAGATTATCCA
                                                                                                                                                                                                 TAACGATAGCTTAGCTGCTGCCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCT 690
                                                                                                                                                                                                                                                                     GAATGATGCCATCAGTACCCGGAGACAGCCATATGAGGATTCATCTGGTATATTCTGGGA 604
                                                                                                                                                                                                                                                                                                                  GAATGATGCTATTAGCACCCGAAGAGCCCCCATATCAGGATTCTTCTGGTATTTTCTGGGA 630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTGACGGCAGCTCAACTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAA 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCTGGTGTTGGACAAAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGA 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GATTCTGGTAACCTCAGGAGCTGTTGGTGTTGGGAGGCAGAGGCTCCAATACCGTAAACT
                                                                                                                                                            TAATGACAGTCTAGCAGCTCTGTTGGCAGCAGAACTTAATGCTGATCTTCTTATCATGCT 664
                                                                                                                                                                                                                                                                                                                                                                           CCAGCTCCGTGAGACTGTTTTTCACTGTTAGATCTTAAAGTAGTACCCTTATTTAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTAACGTCATCTCAACTTCTTGTGACGGATCGTGATTTCAAGGATCCAAGTTTTTGGGGGA 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGCCATGGCCATGGCCATGGAGACCGCCGATCCTGCCCGTGCATTCGTGAAGGACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Score 1046; DB 12;
; Pred. No. 8.2e-306;
0; Mismatches 710;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 2418;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gape
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  124
                                                                                                                                                                                                                                                                                                                                                                              544
                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                            Ś
                                                                                                                               Ś
                                                                                                                                                                                        맑
                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
1831 GTATGGTGGACCAAGGGCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCA 1890
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1591
                                                                               1685 TAAGATTGATTATCCAGCAGCATGTAATGCAATGGAAACACTACTTGTTCATAAAGATCT
                                                                                                                                                                                                                                1711 AAAGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCCTTCTTGTGCATAAGGATCT
                                                                                                                                                                                                                                                                                              1625 CCATGITTACATTGACAAATCAGCCGACATGGATATGGCAAAACGGATAGTATTGGATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1231 GCTAGCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGG 1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1085 TAGGTCTGAAAATGATGCCGATGTTGAGGCAGCACAAGTTGCTGGTTATGAAAAAGTCGTT 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1111 CAAAGCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGGTCAAT 1170
                                                                                                                                  1771 AGAGCAGAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTT 1830
                                                                                                                                                                                                                                                                                                                                               1651 TCATGTATATGTCGACAAGGCTTGTGATACGGATATGGCAAAAGCGCATAGTTTCTGATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1471 AATTCCAGAGACTGTTGGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAAGAGATTCC 1530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1411 GAAGGGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGC 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1205 AACTGCTGÁCATGGÁGGÁCCCTATTTCCCATACATTGÁAAAGAACAGAGGTTGCTAAAGA 1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1171 GGTGGCTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAA 1230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1051 AGACAGGAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAAT 1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              991 TCGTGACATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGA 1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       905 GATCGGTÁCACTTTTCCÁCAACGÁAGCAAATTTGTGGGCATGTTCCÁAGGAAGCTÁCAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             931 TGTTGGAACCTTGTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   871 TGTCATCATAACCAGTGGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACG 930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            785 AAGAGGTGGCATGCAAGCTAAAGTGTCTGCTGCTGCTAATGCTGCATCAAAAGGTGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            811 GAGAGGGGGTATGACTGCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCC 870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TÁTTCCCGÁTÁCTGTTGGCAAAÁAGCTCÁTAGGCCTTGTGACTAGCAAAGAGGAAATTGC 1504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCT 1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAACGCAAACAGATTTTGCTAGATATTGCTGATGCTCTGGAAGCAAATGAGGATGCAAT 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGTTGTCATTGCAAGTGGGTTTGCAACGGATAGCATCATTACAGTTCTCAAAAGGCGAAAA 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCCTGATGCATTGGTCCAGATTGCATCTCTAGCGATCCGAAGTGGTAATGGTCTCCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCTGGTTTTTGAGAAAGCATATTGCCCCATTGGGTGTTCTTCTCATTATTTTTGAGTCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGAGAGATGGCAGTTGCGGCAAGAGACTGTTCGAGGCGTCTACAGAAGTTGTCATCAGA 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTTACTCAGATAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTTGCTAGGATGACCCTAAAGCCAGGAAAGATAACAAATCTTGCAAGATCCATTCGTAA
                                                                                                                                                                                                                                                                                                                                                                                                     AGTITTCCCAAATCAAAGCAACAACTAAGATTCCAGTTTTAGGTCATGCTGATGGTATCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGATCTACTAGCGCTTGATGATGTAATTGATCTTGTCATTCCGAGAGGTAGTAAGTCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCT 1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAAGGAGGGAAAGAAGTTATGAGATCAAATGCAATATTACACAAGGTCATAACTGGAGT 1444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTTGTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCG
```

1350

1324

1384

1204

1770 1684 1710

1744

1624 1650

```
Дb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 11
US-10-425-114-32617
       δ
                                                   밁
                                                                                          Ś
                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                         먉
                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                             ; OTHER INFORMATION: Clone ID: UC-ZMFLMO17010E08_FLI US-10-425-114-32617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Cao, Yongwei TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement FILE REFERENCE: 38-21(53313)8 CURRENT APPLICATION NUMBER: US/10/425,114 CURRENT FILING DATE: 2003-04-28 NUMBER OF SEQ ID NO 32617 NO 32617 LENGTH: 2563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 32617, Application US/10425114
Publication No. US20040034888A1
                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                               Matches 1472;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Liu, Jingdong APPLICANT: Zhou, Yihua
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: DNA
ORGANISM: Zea mays
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2251 CCAAGCTTAAACAAGACTTCCG 2272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2165 TAGTGGACAAGTGGTGAATGGTGACAAGGGAGTTTACACCCACAAGGATCTTCCTTT 2224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1805 TTATGGTGGACCTGTTGCACATGACAAGTTGAAAGTACCAAAGGTAGACTCATTTCGTCA 1864
         271
                                                   240
                                                                                                                                              180
                                                                                                                                                                                                                                                                                   91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zhou, Yihua
Kovalic, David K.
Screen, Steven E
Tabaska, Jack E
                                                                                                                                                                                        acgtatcgtcgttaaggttgggacagcagttgttactggaaaaggtggaagattggctct
       GATATTGGTGTCATCTGGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATT 330
                                                   GGGGAGGCTCGGTTCTCTGTGAACAGGTGAAGCAACTGAATTTTCAAGGGTATGAGGT
                                                                                          GCGAATCATTATCAAGGTGGGCACGGCTGTTGTCACTGGCATGAATGGCCGATTGGCCAT
                                                                                                                                                                                                                                    GGCCATGGCCATGGAGACCGCCGATCCTGCCCGTGCATTCGTGAAGGACGTCAA
                                                                                                                                                                                                                                                                                GACGACGACGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAA 150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAATGAGGCAAATAACCTCCG 2246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAAAGGACAAGTTGTCGACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCCAT 2250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACATGCCCGCGGACCTGTTGGAGTTGATGGACTTCTAACTACTCGCTGCATTTTTGCGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCATGCTCGTGGTCCAGTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGG 2190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTTTGTGATGGGACGCGTTTTGGGCTAGGTGCTGAGGTTGGCATAAGTACAGAGCGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGAT 2130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCACATAAATCGTTATGGAAGTGCACACACAGACTGCATCATCACAACTGATAGAAGTGC 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCACATTCACCGACATGGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGT 2010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGAGTATAGCTCAATGGCATGCACAGTCGAATTTGTTGATGATGTGCAGTCAGCTATCGA 1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGA 1950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGCAGAGGCCTTTCTGCAGCAAGTTGATAGTGCCGCTGTGTTTCATAATGCAAGCACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTTTCCACAACGCCAGCACAAG
                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                          40.7%; Score 1046; DB 12; 67.5%; Pred. No. 8.5e-306; ative 0; Mismatches 710;
                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                         Length 2563;
                                                                                                                                                                                                                                                                                                                             <u>,</u>
                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                          210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2044
                                                                                                                                                                                                                                       179
                                                      299
                                                                                                                                              239
                                                                                                                                                                                                                                                                                                                               0
                           Ś
                                                                                                                 5
                                                                                                                                                                  밁
                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                         맑
                                                                                                                                                                                                                                                                                                                                                     1140
1351 ACCTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCT 1410
                                                                                                                                                                                                                                                                                                                                                                                               1111 CAAAGCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAAT 1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1051 AGACAGGAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAAT 1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      300 GATTCTGGTAACCTCAGGAGCTGTTGGTGTTGGGAGGCAGAGGCTCCAATACCGTAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          331 AGTCAATAGCAGCTTTGCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTG 390
                                                                                                                                                                  AACTGCTGACATGGAGGACCCTATTTCCCATACATTGAAAAGAACAGAGGTTGCTAAAGA 1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCGAGAGATGGCAGTTGCGGCAAGAGACTGTTCGAGGCGTCTACAGAAGTTGTCATCAGA 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATCGGTACACTTTTCCACAACGAAGCAAATTTGTGGGCATGTTCCAAGGAAGCTACAGC 1019
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTTGGAACCTTGTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGC 990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAGAGGTGGCATGCAAAGCTAAAGTGTCTGCTGCTAATGCTGCATCAAAAGGTGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGAGGGGGTATGACTGCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCC 870
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGCGATGTTGAAGGTCTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCA 750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAATGATGCCATCAGTACCCGGAGACAGCCATATGAGGATTCATCTGGTATATTCTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAATGATGCTATTAGCACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGA 630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAACTTAATGAAACTGTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGA 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATCCATAGCAGCTTCGCAGATCTGCAAAATCCTCAGATGAACTTTTGATGGAAAGGCCTG
                                                                                                                                                                                                            GCTAGCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGG 1290
                                                                                                                                                                                                                                                                                                       GGTGGCTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAA 1230
                                                                                                                                                                                                                                                                                                                                                     TÄGGTCTGÄAÄÄTGATGCCGATGTTGAGGCAGCÄCÄAGTTGCTGGTTATGAAAAGTCGTT 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAACGCAAACAGATTTTGCTAGATATTGCTGATGCTCTGGAAGCAAATGAGGATGCAAT 1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCGTGACATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGA 1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGTCATCATAACCAGTGGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACG 930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACATATGTCAATGAAAAGCATGGGAAAGCTAATTAGTTTTTGGAGAGAAGTCTAGTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGTGATGTGGAAGGACTCTATAGTGGTCCACCAAGCGATCCTCAGTCAAAGATTATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAATGACAGTCTAGCAGCTCTGTTGGCAGCAGAACTTAATGCTGATCTTCTTATCATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TAACGATAGCTTAGCTGCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAGCTCCGTGAGACTGTTTTTTCACTGTTAGATCTTAAAGTAGTACCCTTATTTAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTAACGTCATCTCAACTTCTTGTGACGGATCGTGATTTCAAGGATCCAAGTTTTGGGGA 539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCTGCTGTTGGTCAAAGTGTCCTGATGGCGATCTATGACACATTATTTAGCCAACTTGA 479
                                                                            TCTGGTTTTTGAGAAAGCATATTGCCCATTGGGTGTTCTTCTCATTATTTTTGAGTCTCG
                                                                                                                   TCTTGTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCG 1350
                                                                                                                                                                                                                                                             GGTTGCTAGGATGACCCTAAAGCCAGGAAAGATAACAAATCTTGCAAGATCCATTCGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTTGTCATTGCAAGTGGGTTTGCAACGGATAGCATCATTACAGTTCTCAAAGGCGAAAA 959
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CACTTTTGTTAAAGAAAAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGG 810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGTGACGGCAGCTCAACTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAA 510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCTGGTGTTGGACAAAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGA 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 599
                                                                            1379
                                                                                                                                                                                                                                                             1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                419
```

```
RESULT 12
US-10-425-114-3880
                                                                                                                                                                                                                                                                   ₽
                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뭕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           皮
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                               Sequence 3880, Application US/10425114
Publication No. US20040034888A1
GENERAL INFORMATION:
APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
   APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1651 TCATGTATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGC
                                                                                                                                                                                                     2280 GCAATGAGGCAAATAACCTCCG 2301
                                                                                                                                                                                                                                     2251 CCAAGCTTAAACAAGACTTCCG 2272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1711 AAAGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1471 AATTCCAGAGACTGTTGGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAAGAGAGATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1380 TCCTGATGCATTGGTCCAGATTGCATCTCTAGCGATCCGAAGTGGTAATGGTCTCCTTTT 1439
Zhou, Yihua
Kovalic, David K.
Screen, Steven E
Tabaska, Jack E
                                                                                                                                                                                                                                                                      TAGTGGACAAGTGGTGAATGGTGACAAGGGAGTGGTTTACACCCACAAGGATCTTCCTTT
                                                                                                                                                                                                                                                                                                     AAAAGGACAAGTTGTCGACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCAT 2250
                                                                                                                                                                                                                                                                                                                                                                     CCATGCTCGTGGTCCAGTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGCAGAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTT 1830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAAGATTGATTATCCAGCAGCATGTAATGCAATGGAAACACTACTTGTTCATAAAGATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGTTTCCCAAATCAAAGCAACAACTAAGATTCCAGTTTTAGGTCATGCTGATGGTATCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAGGGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGC 1470
                                                                                                                                                                                                                                                                                                                                      ACATGCCCGCGGACCTGTTGGAGTTGATGGACTTCTAACTACTCGCTGCATTTTTGCGCGG
                                                                                                                                                                                                                                                                                                                                                                                                      GTTTTGTGATGGGACGCGTTTTGGGCTAGGTGCTGAGGTTGGCATAAGTACAGAGCGCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTCTCAGATGGTTTCCGATTTCGACTTCGTGCAGAGGTGGGGGTAAGCACGGCCAGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTATGGTGGACCTGTTGCACATGACAAGTTGAAAGTACCAAAGGTAGACTCATTTCGTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTATGGTGGACCAAGGGCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGATCTACTAGCGCTTGATGATGTAATTGATCTTGTCATTCCGAGAGGTAGTAAGTCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAAAGGAGGGAAAGTTATGAGATCAAATGCAATATTACACAAGGTCATAACTGGAGT 1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCAGAGGCCTTTCTGCAGCAAGTTGATAGTGCCGCTGTGTTTCATAATGCAAGCACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTTTCCACAACGCCAGCACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCACATTCACCGACATGGGAGTGCACACACACACTGCATTGTGACAGAGGATCACGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCATGTTTACATTGACAAATCAGCCGACATGGATATGGCAAAAACGGATAGTATTGGATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTTACTCAGATAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATTCCCGATACTGTTGGCAAAAAGCTCATAGGCCTTGTGACTAGCAAAGAGGAAATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCACATAAATCGTTATGGAAGTGCACACACAGACTGCATCATCACAACTGATAGAAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGAGTATAGCTCAATGGCATGCACAGTCGAATTTGTTGATGATGTGCAGTCAGCTATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1919
                                                                                                                                                                                                                                                                      2279
                                                                                                                                                                                                                                                                                                                                                                      2190
                                                                                                                                                                                                                                                                                                                                                                                                      2159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1799
                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                   밁
                                                                                 S
                                                                                                                     밁
                                                                                                                                               Ś
                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-425-114-3880
                                                                                                                                                                                                                                                                                                                                                                                      544
                                                                                                                                                     751
                                                                                                                                                                                      724
                                                                                                                                                                                                                                                                                     631
                                                                                                                                                                                                                                                                                                                                                      571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           244
```

```
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53313)B
CURRENT FILIGATION NUMBER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 3880
LENGTH: 2566
TYPE: DNA
ORGANISM: Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 1472; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 40.7%;
Best Local Similarity 67.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE: OTHER INFORMATION: Clone ID: 700346464_FLI
                                        871 TGTCATCATAACCAGTGGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACG 930
                                                                                                     844 AAGAGGTGGCATGCAAGCTAAAGTGTCTGCTGCTGCTAATGCTGCATCAAAAGGTGTACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             364 TATCCATAGCAGCTTCGCAGATCTGCAAAATCCTCAGATGAACTTTGATGGAAAGGCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       151 ACGTATCGTCGTTAAGGTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    124 GGCCATGGCCATGGCCATGGAGACCGCCGATCCTGCCCGTGCATTCGTGAAGGACGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  91 GACGACGACGACGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAA 150
                                                                                                                                                                                                                                            CACATATGTCAATGAAAAGCATGGGAAGCTAATTAGTTTTTGGAGAGAAGTCTAGTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGCGATGTTGAAGGTCTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAATGATGCCATCAGTACCCGGAGACAGCCATATGAGGATTCATCTGGTATATTCTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAATGATGCTATTAGCACCCGAAGAGCCCCCATATCAGGATTCTTCTGGTATTTTCTGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAACTTAATGAAACTGTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCTGCTGTTGGTCAAAGTGTCCTGATGGCGATCTATGACACATTATTTAGCCAACTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTCAATAGCAGCTTTGCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTG 390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GATTCTGGTAACCTCAGGAGCTGTTGGTGTTGGGAGGCAGAGGCTCCAATACCGTAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATATTGGTGTCATCTGGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGGAGGCTCGGTTCTCTCTGTGAACAGGTGAAGCAACTGAATTTTCAAGGGTATGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCGAATCATTATCAAGGTGGGCACGGCTGTTGTCACTGGCATGAATGGCCGATTGGCCAT
                                                                                                                                                                           GAGAGGGGGTATGACTGCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCC 870
                                                                                                                                                                                                                                                                                                              CACTTTTGTTAAAGAAAAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAATGACAGTCTAGCAGCTCTGTTGGCAGCAGAACTTAATGCTGATCTTCTTATCATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TAACGATAGCTTAGCTGCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTAACGTCATCTCAACTTCTTGTGACGGATCGTGATTTCAAGGATCCAAGTTTTGGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTGACGGCAGCTCAACTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGCTGGTGTTGGACAAAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGA
0; Mismatches 710;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 1046; DB 12;
Pred. No. 8.5e-306;
   =
=
=
=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 2566;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    183
                                                                                                                                                                                                                                                843
                                                                                                                                                                                                                                                                                                                 810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
```

밁 Ś B

뮍 Ś

Ś

```
1564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1144
1984 TCACATAAATCGTTATGGAAGTGCACACAGACTGCATCATCACAACTGATAGAAGTGC 2043
                                              1951 TCACATTCACCGACATGGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGT 2010
                                                                                                                                                                                          1891 TGAGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGA 1950
                                                                                                                                                                                                                                                                                                                                  1831 GTATGGTGGACCAAGGGCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCA 1890
                                                                                                                                                                                                                                                                                                                                                                                                  1771 AGAGCAGAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTT 1830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1744 TAAGATTGATTATCCAGCAGCATGTAATGCAATGGAAACACTACTTGTTCATAAAGATCT 1803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1711 AAAGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCT 1770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1684 CCATGTTTACATTGACAAATCAGCCGACATGGATATGGCAAAACGGATAGTATTGGATGC 1743
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1651 TCATGTATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGC 1710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1624 AGTTTCCCAAATCAAAGCAACAACTAAGATTCCAGTTTTAGGTCATGCTGATGGTATCTG 1683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1351 ACCTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCT 1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1264 AACTGCTGACATGGAGGACCCTATTTCCCATACATTGAAAAGAACAGAGGTTGCTAAAGA 1323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1171 GGTGGCTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAA 1230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1111 CAAAGCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGGTTGGAAGAGTCAAT 1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1084 GGAACGCAAACAGATTTTGCTAGATATTGCTGATGCTCTGGAAGCAAATGAGGATGCAAT 1143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1024 CCGAGAGATGGCAGTTGCGGCAAGAGACTGTTCGAGGCGTCTACAGAAGTTGTCATCAGA 1083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1051 AGACAGGAAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAAT 1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         991 TCGTGACATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGA 1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              904 TGTTGTCATTGCAAGTGGGTTTGCAACGGATAGCATCATTACAGTTCTCAAAGGCGAAAA 963
                                                                                                                                                                                                                                                              TTATGGTGGACCTGTTGCACATGACAAGTTGAAAGTACCAAAGGTAGACTCATTTCGTCA 1923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATTCCCGATACTGTTGGCAAAAAGCTCATAGGCCTTGTGACTAGCAAAGAGGAAATTGC 1563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAAGGAGGGAAAGAAGTTATGAGATCÁAATGCAATATTACACÁAGGTCÁTAÁCTGGAGT 1503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGGGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGC 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCCTGATGCATTGGTCCAGATTGCATCTCTAGCGATCCGAAGTGGTAATGGTCTCCTTTT 1443
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTAGCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGG 1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTTGCTAGGATGACCCTAAAGCCAGGAAAGATAACAAATCTTGCAAGATCCATTCGTAA 1263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TAGGTCTGAAAATGATGCCGATGTTGAGGCAGCACAAGTTGCTGGTTATGAAAAGTCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATCGGTACACTTTTCCACAACGAAGCAAATTTGTGGGCATGTTCCAAGGAAGCTACAGC 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTTGGAACCTTGTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGC 990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCT 1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTTGTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTTGAATCCCG 1350
                                                                                                                                TGAGTATAGCTCAATGGCATGCACAGTCGAATTTGTTGATGATGTGCAGTCAGCTATCGA 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGTTACTCAGATAAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTG 1650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGATCTACTAGCGCTTGATGATGTAATTGATCTTGTCATTCCGAGAGGTAGTAAGTCTCT 1623
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCTGGTTTTTGAGAAAGCATATTGCCCATTGGGTGTTCTTCTCATTATTTTTGAGTCTCG 1383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1203
                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                Ş
                                                                                                    8
                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-425-114-31146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 1461;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Zea mays FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2284 GCAATGAGGCAAATAACCTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2251 CCAAGCTTAAACAAGACTTCCG 2272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2305
```

皮 Ş 밁 Ś 밁 Ś 밁 Ś Ś 밁 밁

8 밁

S

Ś 밁

Ś

밁 8

밁 Ś

밁 S Ś 밁 S B Ś 片

멼

```
APPLICANT: Zhou, Yihua

APPLICANT: Kovalia, David K.

APPLICANT: Screen, Steven E

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

APPLICANT: Cao, Yongwei

TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With

TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement

FILS REFERENCE: 38-21 (53313)B

CURRENT APPLICATION NUMBER: US/10/425,114

CURRENT FILING DATE: 2003-04-28

SEQ ID NO 31146

LENGTH: 2612

TYPE: nm*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION: Clone ID: UC-ZMFLB73134D03_FLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2164 ACATGCCCGCGGACCTGTTGGAGTTGATGGACTTCTAACTACTCGCTGCATTTTGCGCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2011 TGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2224 TAGTGGACAAGTGGTGAATGGTGACAAGGGAGTGGTTTACACCCCACAAGGATCTTCCTTT 2283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2191 AAAAGGACAAGTTGTCGACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCAT 2250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2131 CCATGCTCGTGGTCCAGTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGG 2190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2071 ATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGAT 2130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2044 TGCAGAGGCCTTTCTGCAGCAAGTTGATAGTGCCGCTGTGTTTCATAATGCAAGCACAAG
                                   396 GTGTTGGACAAAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATGTGA 455
                                                                                                                                                                 ззе атадсадстттосодатсттсадаадсстсадастдаасттдатдодаадстттотств зэз
                                                                                                                                                                                                                                     295 TTGTGTCTCAGGTGCTGTTGGTGGGGGAAGCAGAGGCTCAATTACAGGAAGCTTGTCA
                                                                                                                                                                                                                                                                                                                                                                      235 ATTTTGGTGTTCTTTGTGAACAGGTGAAAGAGATAAATGCTCTAGGATACGAGGTGATCA 294
                                                                                                                                                                                                                                                                                                                                                                                                                                      156 TCGTCGTTAAGGTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTC 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        115 CGGCGGCGGTCATGGCCACCGCAGACCAGAGCCGTATTTTCATGAAGGACGTCAAACGCG 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96 CGACGACGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTA 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTTTTGTGATGGGACGCGTTTTGGGCTAGGTGCTGAGGTTGGCATAAGTACAGAGCGCAT 2163
                                                                                                    ÁTAGCAGCTTTGCTGÁTATGCAAAAGCCCACAGACGGAGCTGGATGGAAAGGCTTGCGCTG 414
                                                                                                                                                                                                                                                                                                     TGGTGTCATCTGGTGCGGTTGGTCTTGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCA 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCATCATCAAGGTGGGCACTGCAGTTGTCACGAGGCATGATGGGGCGAGTATCCACAGGCA 234
40.5%; Score 1042.2; DB 12; Length 2612; 67.7%; Pred. No. 1.2e-304; ative 0; Mismatches 698; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Gaps
                                                                                                                                                                                                                                            354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
```

```
955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 936
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           756
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          576 ATGCTATTAGCACCCGAAGAGCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   415 CCGTTGGACAGAGTGGCCTCATGGCTCTCTATGATATGCTATTTACTCAACTTGATGTAT 474
                                                         CAGAGACTGTTGGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAAGAGATTCCTGATT
                                                                                                                                                                                                                                                                                                                                  ATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCCGACCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAG 1115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACA 1055
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTĂCTCTCTTTCATAAGGACGCGAGTTTGTGGGAACCATCCAGTGATGTTAGTGCATGTG 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCATAACCAGTGGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGGGTATGACTGCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCA 875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTGTTAAAGAAAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTAATGAAACTGTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTCTTCCCAACTTCTTGTGACAGACAGTGATTTTGAGAATCCAAACTTCAGGGAGAGGC
                                                                                                                                    GTGGAAAAGAAGCCATGAGATCAAACAAAGTATTGCATAAGGTTATAACTGGTGCCATTC
                                                                                                                                                                                                 GTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTC 1475
                                                                                                                                                                                                                                                                 ATGCCTTGGTCCAGATTGCATCTTTAGCGATTCGAAGTGGCAATGGTCTTCTCTTGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACGTATGGAAGACCCAATCAACCAAATACTCAAAAGAACAGAGATTGCTGAAAATTTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATAGATTGACCCTAAAAGCCAGGAAAGATATCAGCCCTCGCGAAATCCATTCGCACTCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGAGAATGAAGCCGATGTAGCTGCAGCGCAAGATGCTGGATATGAGAAATTTTTGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGG 1175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGATGGCTGTTACTGCAAGAGAATGTTCAAGGCGTCTGCAGAATTTGTCGTCGGATGAGC 1074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAACCTTGTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGGAATGACAGCTAAAGTGAAGGCTGCTCTCGTGGCTTCAAACAGTGGCACACCTGTTG 894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACGTGGATGGCCTCTÁCÁGCGGTCCACCTÁGTGÁACCTCAATCÁÁAGATGÁTACÁTÁCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGTTGAAGGTCTTTACACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATAGCTTAGCTGCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTCGTGAAACTGTTGAGTCAÇTATTAGATCTTAAAGTTGTACCAATATTTAATGAAAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGGCAGCTCAACTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAAC 515
CTAGCAACGTGGGTGAAAAACTTATTGGCCTTGTTACAAGTAGAGACGAAATTGCTGATT
                                                                                                                                                                                                                                                                                                                                                                                                  TTCTCGAGAAAACATCATGTCCTTTGGGTGTCCTATTGGTTATTTTTGAGTCCAGGCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCAATAAAATATTGCTAGACGTGGCGGATGCTTTGGAGAAAAATGAGAATCTAATTAGGA 1134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGCCATCAGCACCAGAAAGGCTCCGTATGAGGATTCATCGGGTATATTTTGGGATAATG
                                                                1535
                                                                                                                                1494
                                                                                                                                                                                                                                                                                                                                  1415
                                                                                                                                                                                                                                                                 1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1235
                                                                                                                                                                                                                                                                                                                                                                                                  1374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              935
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  575
```

```
δ
                                                                                                  밁
                                                                                                                                                S
                                                                                                                                                                                                         당
                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1675
                                      2196 GACAAGTTGTCGACGGAGACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAA 2254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1536 TGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTA 1595
2215 GGCAAGTGGTGAACGGTGACAATGATATCGCATACACCCATAAGAACCTTCCATTGCCA 2273
                                                                                                    CTCGTGGGCCCGTGGGTGTTGAAGGTCTCTTAACAACGCGCTGGATCATGCGAGGGAGCG
                                                                                                                                                     CTCGTGGTCCAGTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAAGGAAAAG 2195
                                                                                                                                                                                                                                                          CAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATG
                                                                                                                                                                                                                                                                                                                                                            AGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTTTCCACAACGCCAGCACAAGATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                TACATTGTTATGGAAGTGCACATACAGATTGCATTGTCACTACAGATGATAAAGTAGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATAGTTCTATGGCCTGCGCAATTGAGTTTGTTGATGATGTACAGTCAGCGATTGACCATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACA 1955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGGACCAAGGGCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGT 1895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGGCTCCAGGTCTTGATGACTTACTGCTATCACTCAAAACAAAAGGAGTTGCTATTTTTG 1854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGT 1715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CACAAATCAAGACATCAACTAAGATCCCTGTTCTTGGTCATGCTGATGGTATCTGTCATG 1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACTAAAGCTTCATGATGTAATTGATCTTGTCATTCCAAGAGGCAGCAATAAGCTGGTTT 1614
                                                                                                                                                                                                         CTGACGGGGCTCGTTTTGGATTGGGTGCTGAGGTTGGCATAAGCACAGGGCGTATACATG
                                                                                                                                                                                                                                                                                                           AAACTTTTCTGCGTCAAGTTGATAGTGCTGCTGTGTTTCATAATGCAAGCACACGATTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGATTACCCAGCAGCCTGCAATGCTATGGAGACATTGCTTGTTCATAAAGATCTTATAA 1794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGC 1775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATACATCGÁCAAATCAGCTAÁCATGAÁTATGGCAAAAACAAATÁGTGATGGÁTGCCÁAAA 1734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCAGATAAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATG 1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCACCGACATGGGAGTGCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAG
                                                                                                                                                                                                                                                                                                                                                            2075
                                                                                                                                                                                                                                                                                                           2094
                                                                                                                                                                                                                                                                                                                                                                                                                2034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1914
                                                                                                                                                                                                                                                          2135
```

```
; FEATURE:
; OTHER INFORMATION: Clone ID: PAT_MRT3847_139950C.1
US-10-424-599-44244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
US-10-424-599-44244
; Sequence 44244, Application US/10424599
; Publication No. US20040031072A1
                                                                                                                                   APPLICANT: La Rosa Thomas J
APPLICANT: Kovalic David K
APPLICANT: Kovalic David K
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(5323)B
FULE REFERENCE: 38-21(5323)B
CURRENT APPLICATION NUMBER: US/10/424,599
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 44244
LENGTH: 1952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION
                                                                                TYPE: DNA
ORGANISM: Glycine max
```

밁 8 片 S 뮍 δ 밁 Ś 밁 Ś 밁 S 밁 S 뮍 Ś 밁 ફ 밁 S 밁 8 밁 Ś B Ś 片 8 밁 Ś 밁 Ş 밁 δ B Ś

```
Ś
                                                                            밁
                                                                                                                                        Ş
                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 1199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            523
                                                                                                                                                                                                                                943
                                                                                                                                                                                                                                                                                                                                                                            883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 653 CTGGCGTTGGAACTGAAAGCTGATCTTCTGATCTTCTGAGCGATGTTGAAGGTCTTTAC 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3
                                                                                                                                            ACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCT 1672
                                                                                                                                                                                                                                                                                                                                                                                                                                    AAACTCATTGGACTTGTGACTTCAAGAGAAGAAGATTCCTGATTTGCTTAAGCTTGATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAATAGCTGATGCCCTGGAAGCACATCAAAATGAGATCAGGATTGAAAATGAAGCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGAT
TGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCC 1732
                                                                    ACTAAAATTCCTGTTTTAGGTCATGCTGATGGAGTTTGTCATGTCTATGTTGATAAGTCT
                                                                                                                                                                                                                            GTAATCGATCTGGTGATTCCAAGAGGCAGCAACAAACTTGTTTCTCAGATCAAGAGTTCC
                                                                                                                                                                                                                                                                                                GTTATCGATCTTGTGATCCCAAGAGGAAGCAACCAAGCTTGTTACTCAGATAAAAAATACT 1612
                                                                                                                                                                                                                                                                                                                                                                            AAACTTATAGGACTTGTGACCTCAAGGGAAGAAATCCCTGAGCTACTTAAGCTGGATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGTCAAATGCAATTTTGCACAAAGTAATTACTGAGGCCATACCAGATACTGTTGGTGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGGT 1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTCCTTTGGGAGTGCTCCTTATTGTTTTTGAGTCACGCCCTGATGCTCTTGTACAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTGGTCAAGTATTAAAACGAACTGAGCTATCAGATGGGCTAATTTTAGAGAAGACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAGACCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTGGGAAGATTGCAAGCCTTGCAAACAACATGCGAATTATTGCCAACATGGAAGATCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGGĂCTGTTCCAGACGGCTCCAGGCCTTATCTTCTGAAGAGAGGAAACAAATTTTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACACGGAAAAAAATTCTGCTT 1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATGCACATAAATGGGCCCCCGGTAAAAGAGGTTGATGCTCGTGAGATGGCAGTTGCAGCC 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCG 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGCTGAGAATATTATCAATGTTCTCCAAGGACAACGCATAGGAACTCTCTTCCATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    тса в столения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в применения в пр
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTAAAAGCTGCTGTTCATGCAGCTGATGCTGGCATTCCTGTTGTTATTACCAGTGGTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTAT 892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGAATGAAATTACTTTTGGTGACAAATCTAGAGTGGGAAGAGGTGGAATGACTGCCAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACTGCAAAA 832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGTGGCCCTCCAAGTGATCCACATTCAAAGCTTATTCATACGTATATTAAGGAGAAGCAT 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACAT 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCGGCCTTGGAGTTAAAAGCCGATCTTCTTGTTTGTTGAGTGATGTAGAAGGTCTTTAT 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTTCACTGGCAATCCGAAGTGGGAATGGACTTCTCTTGAAAGGTGGCAAAGAAGCTAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     37.1%; Score 953.6; DB 12; Length 1952; 74.6%; Pred. No. 7.9e-278; tive 0; Mismatches 409; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                            1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                    1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            . 1312
                                                                                                                                                                                                                                                                                                                                                                        942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                282
                                                                            1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                    밁
                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                OTHER INFORMATION: Clone ID: 700787122_FLI US-10-425-114-8653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-425-114-8653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
APPLICANT: Kovalic, David K.
APPLICANT: Screen, Steven B
APPLICANT: Tabaska, Jack E
APPLICANT: Cao, Yongwel
TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21 (5.3313)
ECURRENT APPLICATION UNCHER: US/10/425,114
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 8653
LENGTH: 1708
TYPE: DNA
COCCNETAL TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SERVICE TO SE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 8653, Application US/10425114
Publication No. US20040034888A1
                                                                                                                                                                                    Matches 1193;
                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Glycine max FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1063 GCTAATGTGGAGATGGCAAGGCGGATTGTACTTGATGCAAAAATAGATTATCCAGCAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1853 AAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1733 TGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAAT 1792
                                                                                            659 TTGGAACTGAAAGCTGATCTTCTGATCTTCTGAGCGATGTTGAAGGTCTTTACACAGGC 718
                                        TTGGAGTTAAAAGCCGATCTTCTTGTTTGTTGAGTGATGTAGAAGGTCTTTATAGTGGC 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAAGCTTAA 2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTCTGTTAAATATTCCACAAGCACAAACATTTCATCATGAGTACAGTTCGCTGGCTTGC 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATAAAGGGATTGTCTATACCCACAAAGACATTGCAACTTAATTTGAA 1650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTGAGGGATTGTTAACAACAAGATGGATACTAAAAAGGAAGTGGACAAGTAGTGGATGGT 1602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAAAAAGGACAAGTTGTCGACGGA 2212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGACTAGGCGCAGAGGTTGGAATTAGTACGAGCAGGATTCATGCTCGAGGTCCAGTAGGA 1542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTAGACAGTGCTGCTGTTTTTCACAATGCAAGCACCAGATTCAGTGATGGGGGCAAGATTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGGATAGCGCTGCTGTTCCACACACGCCAGCACAAGATTCTCAGATGGTTTCCGATTT 2092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAA 2032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTOTTGAAATTGTGGATGACGTGTATGCAGCTATTGATCATATAAATCTTTATGGAAGT 1362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGT 1972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGG 2152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCACATACTGACTCCATCGTTGCAGAAGATAAAGAAGTTGCTAATGTGTTTCTACGCCAA 1422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTATTGTTGTTGACCTACGAACTGAAGGCGTTAAATTATATGGAGGACCAAGGGCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAGT 1852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                    36.9%;
74.5%;
                                                                                                                                                                                                                    Score 947.6; DB 12;
Pred. No. 4.7e-276;
                                                                                                                                                                                    Mismatches
                                                                                                                                                                                    409;
                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                        Length 1708;
```

1482

1912

1242

1182

0,

Gaps

0,

유 성

1858	799 ATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAGTAAGATA	
1798 1141	1739 GCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTT	
1738 1081	1679 ACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAAT	
1678 1021	1619 ATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGAT	
1618 961	1559 GATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAAATACTACAAAA 16: 	
1558 901	1499 ATTGGACTTGTGACTTCAAGAGAAGAGTTCCTGATTTGCTTAAGCTTGATGACGTTATC	
1498 841	1439 AATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAAACTC	
1438 781	1379 CTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAAGG	
1378 721	1319 TTAGGGGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCA	
1318	STCTTGTCTTAGAGAAGACCTCATCACCA 	
1258 601	TTGGT	
1198 541	1139 TCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGA	
1138 481	PAGCT	
1078 421		
1018 1018	CATGGCAGTTGCTGCGAGGGAA 	
958	rgtttcatcaagatgct cttccataaagatgca	
898 241	CATAACCAGTGGGTATTCAGCT	
838 181	$\triangleright - \triangleright$	
778 121	AAGAT AGAAT	

В

8

8 8 8 8

8 8

뫄

Ś

8 B

DЬ

5 B

1562 GGGATTGTGTATACCCACAAAGACATTGCAACTTAATTTGAA 1603	рb
2219 GGAATTGITTACACCCATCAGGACATTCCCATCCAAGCTTAA 2260	Q
1502 GGATTGTTAACAACAAGATGGATACTAAAAGGAAGTGGACAAGTAGTGGATGGA	문
2159 GGATTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTCGACGAGACAAT	Ś
1442 GGCGCAGAGGTTGGAATTAGTACGAGCAGGATTCATGCTCGAGGTCCAGTAGGAGTTGAG	p
2099 GGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCGAGTCGAA	Ş
1382 AGTGCTGCTGTTTTTCACAATGCAAGCACCAGATTCAGTGATGGGGCAAGATTTGGACTA	밁
2039 AGCGCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGAATGGTTTCCGAGTTTGGACTT	Ş
1322 ACTGACTCCATCGTTGCAGAAGATAAAGAAGTTGCTAATGTGTTTCTACGCCAAGTAGAC	문
1979 ACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGAT	Ş
1262 GAAATTGTGGATGAACGTATGCAGCTATTGATCATATAAATCTTTATGGAAGTGCACAT	В
1919 GAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGTGCACAC	Ş
1202 TIAAATATTCCACAAGCACAAACATTTCATCATGAGTACAGTTCGCTGGCTTGCACTGT	뮍
1859 CTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTT	γQ
1142 GTTGTTGACCTACGAACTGAAGGCGTTAAATTATATGGAGGACCAAGGGCAAGTTCTCTG	문

Search completed: March 10, 2004, 11:58:30 Job time: 849.374 secs

```
Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Run on: 、
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  March 10, 2004, 10:40:15; Search time 5867.85 Seconds (without alignments) 13084.110 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   27513289 seqs, 14931090276 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-026-767-2
2571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 ctgatatttattttcttacc.....tcaagatactactacttttc 2571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                     em_estov:*
em_estpl:*
                                                                                                                                                                                                                                                                                                   gb_est1:*
gb_est2:*
gb_htc:*
                                                                                                                                                                                                                                                                                                                                                    em_estro:*
em gss mam: *
em gss pro: *
em gss pro: *
em gss phg: *
em gss phg: *
em gss phg: *
gb gss1: *
gb gss2: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_estba:*
em_esthum:*
                                                                                                                                    em_gss_inv:*
em_gss_inv:*
em_gss_pln:*
em_gss_vrt:*
em_gss_fun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                    em_estin:*
                                                                                                                                                                                                                      em_estom:*
                                                                                                                                                                                                                                                                                                                                                                                                                      _estmu:*
                                                                                                                                                                                                                                      _estfun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       55026578
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

4	ω	N	1	Result No.
730.4	742.2	753.4	1050.4	Score
28.4	28.9	29.3	40.9	% Query Match
1961	748	887	2627	% Query Match Length DB ID
11	14	10	13	DB ID
AY109740	CB257851	BE037600	BU103703	
AY109740 Zéa mays	CB257851 96-E01179	BE037600 AA01F10 A	BU103703 SCJFLR107	Description

a	a	a a	O	O	O		O			O	O	a			O						
4 4 4 0 4 0	41 42	37 38 39	ωωω 4 τυ ο	3 2 3 2	30 31	2 8	27	2 2 2 4 5 5 6	23	22 22	20	1 00	16	15	13	24	는 (φ	φ	7	ກຫ
٠ . سر	242	431.4 430.8 426.8	35. 43	ω 4		27	20 42	512 487.4	512.4	ந் மைய	URC		ហ H	0 1	96	612	σĺ	653.4	on.	6	
თთთ	999	16.8 16.8	თთთ	7.	770	o œ	00 0	φφ	9	00	0:	٠,	. ·	N	ຸພ	ω	4.	٠,	<u>ب</u>	ST :	ი ი
771 833 418	743 778 437	434 701 451	785 435 667	674 441	801 451	5 7 0	495	512 697	649	592 876	542	n 51 10 10 10 10 10 10 10 10 10 10 10 10 10	554 554	591	л 55 0 00 Л 00	648	619	1685	654	806	730
9 14 2	14 9	9139	9 14	φφ	9 14	9	9 14	14	14	13	14	φ	14	13	ه ۲	14	9 5	1 1	14	12	10 14
841	7938	AV796385 BU862253 AV793771	0.4.0	54	9171 4408	22	4532	1 21 (2)	23	6224 3824	51	36	5573	in (3699	5	0359	0586	25785	8550	E037
30 EST517 07 EST678 9 AV79897	56 CAB20002 54 RTDS2_2_ 5 AV807915	AV796385 S013C11 AV793771	17 UCRCS0 2 AV79470 5 AB05054	AV82313 AV79549	7 UCRCS01 8 AV794408	8 AV552988	NV784532	AV52933	8 BN40.04	AV826224 5 Ds01_01f	8 96-E01) AV44061	15 23-E012	14 023B04 I	9 AV523699	59 42-E01	AV560359	ob Zea ma	3 96-E011)8 10_F12_T	55 AA02E

ALIGNMENTS

COLUMN	COMMENT	JOURNAL MEDLINE	TITLE	AUTHORS	REFERENCE		ORGANISM	SOURCE	KEYWORDS	VERSION	ACCESSION	DEFINITION	Locus	BU103703	RESULT 1
Bioinformatice Lab Bioinformatice Lab Organization for Nucleotide Sequencing and Analysis C.P. 6176, Campinas, SP 13083-970, Brazil Tel: 55 19 37881101 Fax: 55 19 37881089	12913139 Contact: Nomieira FTS	Plant Physiol. 132 (4), 1811-1824 (2003) 22795309	RNA expression profiles and data mining of sugarcane response to low temperature	Nogueira, F.T.S., de Rosa, V.E. Jr., Menossi, M., Ullan, E.C. and Arruda, P.		guraryota; viritifizantes; otreptophyta; himtyophyta; Archeophyta; Spermatophyta; Magnoliophyta; Liliophida; Poales; Poaceae; PACCAD clade; Panicoideae; Andropogoneae; Saccharum.	Saccharum officinarum	Saccharum officinarum	EST.	BU103703.1 GI:32815034	BU103703	SCJFLR1073H12.g Saccharum officinarum mRNA (Nogueira, F.T.S)	BU103703 2627 bp mRNA linear EST 12-AUG-2003		

```
S
                                                                                                                            В
                                                                                                                                                                        Ş
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                       멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 67.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 1474;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 366
                               966
                                                                           933
                                                                                                                            906
                                                                                                                                                                           873
                                                                                                                                                                                                                         846
                                                                                                                                                                                                                                                                     813
                                                                                                                                                                                                                                                                                                                       786
                                                                                                                                                                                                                                                                                                                                                                     753
                                                                                                                                                                                                                                                                                                                                                                                                                       726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3
3
3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     273 TATTGGTGTCATCTGGTGCGGTTGGTCTTGGCCAGGCAAAGGCTTCGTTATCGACAATTAG 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      186 GAATCATTATCAAGGTGGGCACAGCTGTTGTCACTGGGCAGAATGGCCGATTGGCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      126 CGGCGGGCATGACCATGGAGAACGCCGATTCCGCCCGCGCATTCGTGAAGGACGTCAAGC 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     153 GTATCGTCGTTAAGGTTGGGACAGCAGTTGTTACTGGAAAAGGTGGAAGATTGGCTCTTG 212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             93 CGACGACGACGATAATGGAGGAGCTAGATCGTTCACGTGCTTTTGCCAGAGACGTCAAAC 152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: tebaldi@unicamp.br.
                                                                      TTGGAACCTTGTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTC 992
                                                                                                                         TTGTCATCGCAAGTGGATTTGCAACGGATAGCATCATTAAAGTTCTCAAAGGAGAAAAGA 965
                                                                                                                                                      TCATCATAACCAGTGGGTATTCAGCTGAGAACATAGATAAAGTCCTCAGAGAGGACTACGTG 932
                                                                                                                                                                                                                    GAGGTGGCATGCAAGCTAAAGTGGCTGCTGCTAATGCTGCATCAAAAGGTGTACCTG
                                                                                                                                                                                                                                                                                                                                                                   CTTTTGTTAAAGAAAACATCAAGATGAGATTACATTCGGCGACAAATCAAGATTAGGGA 812
                                                                                                                                                                                                                                                                                                                                                                                                                 GTGATGTGGAGGGACTCTATAGTGGTCCACCAAGCGATCCTCAGTCAAAGATTATCCACA 785
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ecearerreaaegrerraacaeaegecerrecaaerearecraacreaaegreaaegrearecaea
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGACAGTCTAGCAGCTCTGTTGGCAGCCGAACTTAATGCTGATCTTCTTATCATGCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACGATAGCTTAGCTGCTCTACTGGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGA 692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATGATGCTATTAGCACCCGAAGAGCCCCCATATCAGGATTCTTCTGGTATTTTCTGGGATA 632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTTAATGAAACTGTCAAGTCTATGCTTGATTTGAGGGTTATTCCAATTTTCAATGAGA 572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAACGTCATCTCAACTTCTTGTAACCGATCGTGATTTCAAGGATCCAAGTTTTGGGGACC 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGACGGCAGCTCAACTTCTGGTGAATGACAGTAGTTTTAGAGACAAGGATTTCAGGAAGC 512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGCTGTTGGTCAAAGTGGTCTGATGGCTATCTATGACACATTATTTAGCCAACTTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TACATAGCAGCTTTGCAGATCTACAAAATCCTCAGATGAACTTTGATGGAAAGGCCTGCG 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCAATAGCAGCTTTGCGGATCTTCAGAAGCCTCAGACTGAACTTGATGGGAAGGCTTGTG 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCAGGCTCGGTTCTCTCTGTGAACAGGTGAAGCAACTGAATTTTCAAGGGTATGAGGTGA 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGGGGGTATGACTGCAAAAGTCAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTG 872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATGATGCCATAAGTACCCGGAGACAACCATATGAGGATTCATCTGGTATATTCTGGGATA 665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGCTCCGCGAGACTGTTTTTCACTATTAAATCTTAAAGTAATACCGTTGTTCAATGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGGTGTTGGACAAAGCAGTCTTATGGCTTACTATGAGACTATGTTTGACCAGCTTGATG 452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTCTGGTAACCTCAGGAGCTGTTGGTGTTGGGAGGCAGAGGCTCCAATACCGTAAGCTTA 365
                         TTGGTACACTTTTCCACAATGAAGCAAATTTGTGGGAATGTTCCAAGGAAGCTACAGCCC 1025
                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .2627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="mRNA"
/db_xref="taxon:4547"
/clone_lib="Saccharum officinarum mRNA (Nogueira,F.T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Saccharum officinarum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 1050.4; DB 13; Length 2627; Pred. No. 7.1e-260;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches 706; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .
망
                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
S
                                              밁
                                                                                        Ś
                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                               2013
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1533 ATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1206
  2073 TCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGGTAAGCACGGGCAGGATCC 2132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1773 AGCAGAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGT 1832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1713 AGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAG 1772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1686 ATGTTTACATTGACAAATCAGCCGACATGGATATGGCAAAAAGGATAGTATTGGACGCTA 1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1653 ATGTATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAA 1712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1593 TTACTCAGATAAAAAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTC 1652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1566 ATTTGCTAGCGCTTGATGATGTGATTGATCTTGTCATTCCTAGAGGCAGTAAGAATCTAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1473 TTCCAGAGACTGTTGGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAGAAGAAGAATTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1053 ACAGGAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCA 1112
                                              2046 CAGAGGCTTTTCTGCAGCAAGTCGATAGTGCCGCTGTGTTTCATAACGCAAGCACAAGGT
                                                                                                                                                                                             1953 ACATTCACCGACATGGGAGTGCACACAGAGTGCATTGTGACAGAGGATCACGAAGTTG 2012
                                                                                                                                                                                                                                           1926 AGTATAGCTCAATGGCATGCACTCTTGAATTTGTTGATGATGTGCAGTCAGCCATCGATC
                                                                                                                                                                                                                                                                                             1893 AGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATC 1952
                                                                                                                                                                                                                                                                                                                                         1866 ATGGTGGGCCTGTTGCACATGACAAATTGAAAGTACCAAAGGTAGATTCATTTCGTCATG
                                                                                                                                                                                                                                                                                                                                                                                       1833 ATGGTGGACCAAGGGCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1746 AGGTTGATTATCCAGCAGCATGTAATGCAATGGAAACACTACTTGTTCATAAAGATCTTA 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1626 TCTCCCAAATCAAAGCAACAACTAAGATTCCAGTTCTAGGTCATGCTGATGGTATCTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1446 ÁAGGAGÁÁAAGAAGCTATGAGÁTCAÁÁCACAÁTATTÁCÁCAAGGTCÁTAÁCTGGGGTTÁ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1233 TAGCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1146 GGTCTGAAAATGAAGCCGATGTTGAGGCAGCAGAGCTGCTGGTTATGAAAAGTCGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1026 GAGAGATGGCAGTTGCGGCAAGAGACTGTTCGAGACGTCTACAGAAGTTGTCGTCAGAGG 1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1113 AAGCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGG 1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  993 GTGACATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAG 1052
                                                                                             CAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTGTTCCACAACGCCAGCACAAGAT
                                                                                                                                              ACATAAATCGTTATGGAAGTGCACACACAGACTGCATCATCACAACTGATGAAAGTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGGGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAA 1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTGTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGAC 1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGCTGACATGGAGGACCCTATTTCCCATACATTGAAAAGAACAGAGGTTGCTAAAGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTGCTAGAATGACCCTAAAGCCAGGÄÄÄGATAACAÄACCTTGCÄAGATCCATTCGTGCCA 1265
                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCCAGATATTGTTGGTAAAAAGCTCATAGGCCATGTGACTAGCAAAGATGAAAATTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGATGCATTGGTCCAGATTGCATCTCTGGCAATTCCGAAGTGGTAATGGTCTTCTTTTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGA 1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TEGETEGETTAGTTATGACACCTEGAAAGATETEGAGECTTGCAGETTCAGTTCGTAAGE 1232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AACGCAAAAAGATTTTGCTAGATATTGCTGATGCTCTGGAAGCAAATGAGGATGCAATTA 1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TGGTTTTTGAGAAAGCATATTGCCCCATTGGGTGTTCTGCTCATTATTTTTGAGTCTCGTC
```

2105

1985

1892

1865

1925

1685

1592 1565 1532

1625

1445

1505

1385

```
Ś
                                                 Ş
                                                                                              밁
                                                                                                                                                                                      밁
                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 2
BE037600
                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                    Match 29.3%; Local Similarity 97.5%;
                                 1306 GACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACCTTGT 1365
                                                                                                                           1246 AGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAA 1305
                                                                                                                                                                                                                               1126 GTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGT 1185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2193 AAGGACAAGTIGTCGACGGAGAGAATGGAATTGTTTACACCCATCAGGACATTCCCATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2286 AATGAGGCAAAGAACCTCTG 2305
                                                                                                                                                                                    1 (bases 1 to 887)
Bohnert, H. J., Borchert, C., Brazille, S., Brooks, J., Eaton, M., Ferrea, H., Kawasaki, S., McCollough, A., Michalowski, C.B., Palacio, C., Scara, G., Wheeler, M. and Zepeda, G.R.
Functional Genomics of Plant Stress Tolerance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bio Sciences West room 513, Tucson, Tel: 520-621-7982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (2000)
Contact: Michalowski, C.B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BE037600 887 bp mRNA linear ES
AA01F10 AA Arabidopsis thaliana cDNA 5' similar to del
1-pyrroline-5-carboxylate synthetase a, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: cbm@u.arizona.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        University of Arizona
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rosids; eurosids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BE037600.1 GI:8332616
                                                                                            AGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAA 207
       GACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGT 267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGCTTAAACAAGACTTCCG 2272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGGACAAGTGGTGAATGGTGACAAGGGAGTGGTTTACACCCACAAGGATCTTCCTTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCTCGTGGTCCAGTCGGGGTCGAAGGATTACTTACAACGAGATGGATAATGAGAGGAA 2192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCCCGCGGACCTGTTGGAGTTGATGGACTTCTAACTACTCGCTGCATTTTACGCGGTA 2225
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        520-621-1697
                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 reading frame exists.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Arabidopsis thaliana"
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="taxon:3702"
/tissue_type="leaves,
/dev_stage="12 weeks"
/clone_lib="AA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /mol_type="mRNA"
/cultivar="Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note="20 h 200mM NaCl"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                . BB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 II; Brassicales; Brassicaceae; Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                      Score 753.4; DB 10;
Pred. No. 3e-183;
                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              flowering plants"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AZ 85721,
                                                                                                                                                                                                                                                                                                                                                                   17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear EST (
similar to delta
                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                            Length 887;
                                                                                                                                                                                                                                                                                                                                                                 ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST 07-JUN-2000
                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                              87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 3
CB257851
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
KEYWORDS
       FEATURES
                                                                                                                                                                                                         COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1366 ACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGA 1425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1906 GGCTTGCACTGTTGAAGTTGTAGAAGACGTTTATGG 1941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      328
                                                                                                                             Contact: Weisshaar B
ADIS DNA core facility at MPIZ
Max-Planck-Institute for Plant Breeding Research
Carl-yon-Linne Weg 10, 50829 Koeln, Germany
                                                                                                                                                                                                                                                                  Schmid, K.J., Soerensen, T.R., Stracke, R., Torjek, O., Altmann, T., Mitchell-Olds, T. and Weisshaar, B.

Large-scale identification and analysis of genome-wide single-nucleotide polymorphisms for mapping in Arabidopsis thal genome Res. 13 (6), 1250-1257 (2003)
                                                                                                                                                                                                                                                                                                                                                                                           Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
Arabidopsis thaliana
Eukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
cosids; eurosids []; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CB257851 748 bp mRNA linear EST 06-NOV-200: 96-E011798-014-004-024-T7R MPIZ-ADIS-014 Arabidopsis thaliana cDNA clone MPIZP7710244Q 5-PRIME, mRNA sequence.
Email: weisshaa@mpiz-koeln.mpg.de
Insert Length: 748 Std Error: 0.00
Plate: 4 row: O column: 24
Seq primer: TTR; CTAATACGACTCACTATAGGGA.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CB257851.1 GI:32882624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTTGGACTATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCAAGTAAGATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAA 1905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGCTT-CACTGGTGAAGTTGTTAAGAACTTATGGGG 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGCAAGTAGGATTCTGAACATACCAGAAGCACGGCATTTCAACC-TGAGTACTGTGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTTAATGAGCTNATTTTTGTTCTGCATAGCAATGGAGTCACTTTGTATGGTGGACC-AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGCAGCCTGTÄÄTGCGÄTGGÄÄACCCTTCTTGTGCÄTAAGGATCTAGAGCAGAATGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGCAGCCTGTAATGCGATGGAAACCCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGT 1785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAATACTACAAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTTAATGAGCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAG 1845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAA 1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAAGAAGAGATTCCTGATTTGCTTAAGCT 1545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGT 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGT 1485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGA
                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 748)
                                                                                                                 00492215062851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear EST 06-NOV-2003
                                                                                                                                                                                                                                                                                          in Arabidopsis thaliana
```

746

1725

567

627

1665

507

447

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                     밁
                                                                                                              Ś
                                                                                                                                                                멼
                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                   999
                                                                                                                                                                361
                                                                                                                                                                                                            909
                                                                                                                                                                                                                                                         301
                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                              486
                                                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  366 AGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGCTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             306 GGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAAGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        246 AATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTTGGTCTTGGCA 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     744;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 AATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGGTGCGGTTTGGCA
                           GTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGAGATTA 785
                                                                                                                 TGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTACACAGGCCCTCCAA
                                                                                                                                                                AGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTTGGAAC
                                                                                                                                                                                                                                                                                                     TGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCCATATC
                                                                                                                                                                                                                                                                                                                                               GTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCTTGATT
                                                                                                                                                                                                                                                                                                                                                                                              GTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCTTGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGACAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGACAGTA 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAAGCCTC
                                                                     TGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTACACAGGCCCTCCAA
                                                                                                                                                                                                            AGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTTGGAAC
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone_lib="MPIZ-ADIS-014"
//clone_lib="MPIZ-ADIS-014"
//note="Vector: psppRT1; Site_1: Sal1; Site_2: Not1; cDNA
//note="Vector: psppRT1; Site_1: Sal1; Site_2: Not1; cDNA
library from Arabidopsis thaliana, accession Cvi; six
weeks old total plants grown under long-day conditions in
soil, whole adult plants were treated for 24 hours with
different stresses, (1) at 4 Grad C in the dark, (2), at
37 Grad C in the dark, (3) lying in the lab after removing
from soil, (4) in the greenhouse after wounding leaves
with a foreceps, (5) in the lab watering with a 150 mM
NaCl solution, (6) at 26 Grad C in the light/UV; equal
quantities of streesed plant material were pooled; library
was made at the Max-Planck-Institute for Plant Breeding
pagesarch Colorms (Germanu: cloning sites Sall-Not1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     primer sites and orientation:
77-Sali-CCACGCGTCG-Sprime-cDNA-polyA-CC-NotI-SP6; Note:
8equencing granted in the context of the GABI Arabidopsis
Verbund I: Genetic Diversity, 'Establishment of
high-efficiency SNP-based mapping tools and development of
methods for genome-wide mutation detection' PI: Bernd
Weisshaar Sequence submission managed by RZPDJ(GABI-Primary
database: http://gabi.rzpd.de. This clone is available
from RZPD; contact RZPD (clone@rzpd.de) for further
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         information.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Research,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /tissue_type="whole plant"
/dev_stage="adult plant, mixed stresses"
/lab_host="B. coli TOP10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /mol_type="mRNA"
/cultivar="Cape Verde Island (Cvi)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         db_xref="GABI:59217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 clone="MPIZp7710244Q"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28.9%;
99.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cologne, Germany; cloning sites Sall-Not1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 742.2; DB 14; Length 748; Pred. No. 2.2e-180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             365
                                                                       480
                                                                                                                                                                420
                                                                                                                                                                                                            665
                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                       508
                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                              545
                                                                                                                                                                                                                                                                                                                                                                                                                                             240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 4
AY109740
LOCUS
                           片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                   Matches 1037;
                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            846
                             2 GGCACGAGGÁCTTAÁAGCAGÁTCTCCTTGGTCTACTAÁGTGATGTAGÁTGGTCTATÁCAG 61
                                                                     GGCGTTGGAACTGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTACAC 714
```

```
786 CATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACTGCAAAAGTCAAAGCTGCAG 845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481 GTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGAGATTA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (25-APR-2002) Maize Mapping Project, University of Missouri, Columbia, MO 65211, USA

If you are interested in getting corresponding physical clones, these are publicly available from ZmDB and may be found by BLAST searching at MSL, maizemap.org; ZmDB, www.rmdb.iastate.edu; TICR, www.ntigr.org; or NCBI, www.ncbi.nlm.nih.gov. When the source of t maize cDNA sequences is either Virginia Walbot, Stanford or Pat Schnable, 100% State, then clones may be requested from ZmDB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zea mays
Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Zea mays
AY109740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Maize Mapping Project/DuPont Consensus Sequences for Design of Overgo Probes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   www.zmdb.iastate.edu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Coe, E.H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hainey, C.F., Dolan, M., Miao, G.H., Vogel, J.M., Whitsitt, M.S., Arthur, L.W., Hanafey, M., Morgante, M. and Tingey, S.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACCAD clade; Panicoldeae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AY109740.1 GI:21213575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGGCTCGATCACAGATTCTAATGCTCG 748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGCTCCGATCACAGATTCTAATGCTCG 993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGNTTCATCAAGATGCTCGTTTAT 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTGAGAACA 905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACTGCAAAAGTCAAAGCTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCGTTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTGAGAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (bases 1 to 1961)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (bases 1 to 1961)
                                                                                                                                                          /note="this sequence is part of a project of EST assemblies resulting from the application of public contigs to seed DuPont contigs; this resource was assembled by DuPont as part of a collaboration for the overgo addressing of BACs in conjunction with the Maize Mapping Project"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CL2942_1 mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Zea mays"
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                 db_xref="taxon:4577"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 db_xref="MaizeDB:631239"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (2002)
                               28.4%;
                                                                                                                                                                                                                                                                                                                                                                                                  lib="Maize Mapping Project/DuPont Cornsensus
Score 730.4; DB 11;
Pred. No. 3.1e-177;
0; Mismatches 563;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1961 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
                                                                  Length 1961;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     the
```

Conservative

0

Indels

0

Gaps

0,

δ

음 성 음 성 음

경 음 성

유 성

뮍

```
1195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1555 TATCGATCTTGTGATCCCAAGAGGAAGCAAGCAAGCTTGTTACTCAGATAAAAAATACTAC 1614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1135 AGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACC 1194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1075 TATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGT 1134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1315 ACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGC 1374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1495 ACTCATTGGACTTGTGACTTCAAGAGAAGAGATTCCTGATTTGCTTAAGCTTGATGACGT 1554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       842 NCTTATTGGCCTTGTTACAAGTAGAGATGAAATCGCTGATTACTAAAGCTTGATGATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            835 CAAAGCTGCAGTCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   122 CAGTGGAATAACTTTTGGGGATAAGTCACGTGTAGGTAGAGGAGGAATGACAGCTAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       715 AGGCCCTCCAAGTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAAACATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62
GCTTATTTTTGCTCTGCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAGTAA 1854
                                                                          CAATGCTATGGAGACATTGCTTGTTCATAAAGACCTTATAAAAGGCTCCAGGTCTTGATGA 1141
                                                                                                                                                                                                                                                                                                                                                                                     TAAGATACCTGTCCTCGGTCATGCGGATGGTATTTGTCATGTATACATTGACAAATCAGC 1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAAAATCCCTGTGCTAGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTG 1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATCGAACACAGTATTACATAAGGTTATAACTGGCGCAATTCCTGACAACGTGGGTCNNNN 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCTTTAGCAGTTCGAAGTGGCAATGGTCTTCTCCTGAAAGGTGGAAAAGAAGCCATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAACCAGATACTCAAAAGAACAGAGGTTGCTGAAGACTTAGTGCTCGNNNNNNCATCTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAGACCTCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAAAAGATAGCAAGCCTTGCGAAATCCATACGCACTCTTGCAAATATGGAAGACCCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NNNNNNNNNNNNNNNNNNGGATATCAGAAATCTTTGGTTGATAGATTGACATTGAAGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAATGTTCAAGGCGTCTGCAGAATTTATCATCGGATGAACGCAAGAAAATATTGTTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGGAAAAAAATTCTGCTTGA 1074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGCTGAGAACATAGATAAAGTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGGCTGCTTTTGTGGCTTCGAACAGTGGCACACCTGTTGTTATTACAAGTGGATTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGATGAGATTAÇATTCGGCGACAAATCAAGATTAGGGAGAGGGGGTATGACTGCAAAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGGTCCACCAAGCGAACCGGGATCAAAGATCATTCATACCTACATCAAAGATAAACATTA
                                                                                                                                                 TAATGCGATGGAAACCCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGA 1794
                                                                                                                                                                                                                                   TGACATGAATÁTGGCAAAACGAATAGTGATGGATGCCAAAAACTGATTACCCAGCAGCTG 1081
                                                                                                                                                                                                                                                                                                          TGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTG 1734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATTGATCTTGTCATTCCAAGAGGCAGCAATAAGCTGGTTTCGCAAATCAAAGCATCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAA 1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCCTCTGGGTGTGGTTGATTGNNNNGAGTCCAGGCCTGATGCCTTAGTCCAGATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGCAAGTCTGTGGGAGCCATCCAAGGATGTTAGTGCTCGTGAGATGGCTGTTGCTGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATCTCAGAGCATTGTTAGAGTTCTCCAAGGAGAGAAGATTGGTACTCTCTTCCATAAGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               954
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241
```

Ş

8 8 8 8 8 8 8 8

5 B 5 B 5 B 5 B 5 B 5 B 5 B 5 B 5

밁

```
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 5
BE037665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                    ORIGIN
                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FOCUS
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1562 CAAGAATGTTGCATACACCCATAAGAACCTTCCCTTACAA 1601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2215 CAATGGAATTGTTTACACCCATCAGGACATTCCCATCCAA 2254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2155 CGAAGGATTACTTACAACGAGATGGATAATGAGGAGAAAAGGACAAGTTGTCGACGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2035 GGATAGCGCTGCTGTTCCACAACGCCAGCAAGATTCTCAGATGGTTTCCGATTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1262 AATTGAGTTCGTTGATGATGTACAGTCAGCAATTAACCATATACATCGTTATGGAAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1202 AGTÁCTGTGTÁTTCCGAÁÁGCÁGATTCÁTTCCÁTCÁTGÁATÁTAGCTCTÁTGGCCTGCÁC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1855 GATACTGAACATACCAGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCAC 1914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1142 TATACTCCTATCACTCAAAACAGAAGGAGTTGCTATTTATGGAGGGCCTGTTGCACATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    730 bp mRNA linear EST (AA02E05 AA Arabidopsis thaliana cDNA 5' similar to delta 1-pyrroline-5-carboxylate synthetase a, mRNA sequence. BE037665
                                                                                                                                                                                                                                                                                                                                                                             Bio Sciences West room 513,
Tel: 520-621-7982
Fax: 520-621-1697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 730)
Bohnert, H., Caronico, Brazille, S., Brooks, J., Eaton Bohnert, H., Kawasaki, S., McCollough, A., Michalowski, C.B., Palacio, C., Scara, G., Wheeler, M. and Zepeda, G.R. Functional Genomics of Plant Stress Tolerance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                  An open reading frame exists.
Insert Length: 1 Std Error:
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Michalowski, C.B. University of Arizona
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Arabidopsis thaliana (thale cress)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BE037665.1 GI:8332681
                                                                                                                                                                                                                                                                                                                                                          Email: cbm@u.arizona.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGAAGGTCTCTTAACAACACGCTGGATCATGCGAGGAAGTGGGCAAGTGGTGAATTGTGA 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACATACAGATTGCATTATCACCACAGATGATAAAGTAGCAGAAACTTTTCTGCGGCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTTGAAGTTGTAGAAGACGTTTATGGTGCTATAGATCACATTCACCGACATGGGAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTGGGTGCCGAGGTTGGCATAAGCACAGGGCGTATACATGCTCGCGGGCCTGTGGGTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACACACAGACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTTGGTGCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TGATAGTGCTGCTGTATTTCATAATGCGAGTACACGATTCTCTGATGGGGCTCGTTTTGG
                                                                                  tissue type="leaves, f/dev_stage="12 weeks"
/dev_stage="12 weeks"
/clone_lib="AA"
/note="20 h 200mM NaCl"
                                                                                                                                                                             /cultivar="Columbia"
/db_xref="taxon:3702"
                                                                                                                                                                                                                                             organism="Arabidopsis thaliana"
26.7%;
98.8%;
                                                                                                                                                                                                                     type="mRNA"
score 686.8; DB 10; Length 730;
Pred. No. 4.6e-166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Tucson,
                                                                                                                                                       flowering
                                                                                                                                                                                                                                                                                                                 .
8
                                                                                                                                                                                                                                                                                                                                                                                                                            AZ 85721, USF
                                                                                                                                                       plants"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eaton, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST 07-JUN-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2094
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1501
```

```
RESULT 6
CB258889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5
                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 713; Conservative
                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1598
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1716 TG 1717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       998 ATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGACAGG 1057
Arabidopsis thaliana
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
rosids; eurosids I; Brassicales; Brassicaceae; Arabidopsis.
1 (bases 1 to 676)
Schmid, K.J., Soerensen, T.R., Stracke, R., Torjek, O., Altmann, T.,
Mitchell-Olde, T. and Weisshaar, B.
Large-scale identification and analysis of genome-wide
single-nucleotide polymorphisms for mapping in Arabidopsis thalian.
                                                                                                                                                                                                                                                                                                                                      CB258889 676 bp mRNA linear EST 06-NOV-200: 09-E012734-014-002-B03-T7R MPIZ-ADIS-014 Arabidopsis thaliana cDNA clone MPIZp771B032Q 5-PRIME, mRNA sequence.
                                                                                                                                                                                                                                     Arabidopsis thaliana (thale cress)
                                                                                                                                                                                                                                                                                             CB258889.1 GI:32883662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GG 727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TATATGTCGACAAGGCTTGTGATACGGATATGGCAAAGCGCATAGTTTCTGATGCAAAGT 1715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAGATAAAAAATACTACAAAAA-TCCCTGTGCTAGGTCAT-GCTGATGGAATCTGTCATG 1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAATTCCA 1477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAAGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCTTGTC 1297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGTGGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAGATAAAAAATACTACAAAAATTCCCTGTGCTAGGTCATGGCTGATGGAATCTGTCATG 665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTAAGCTTGATGACGTTATCGATCTTGTGATCCCAAGAGGAAGCAACAAGCTTGTTACT 1597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACCTGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
          mapping in Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7; Indels
                                                                                                                                                                                                                                                                                                                                                                                              EST 06-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2
                                                                밁
                                                                                                           ঠ
                                                                                                                                                                 밁
                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 673;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
                301
                                                                                                                                                                    181
                                                                                                                                                                                                                    181
                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Seq primer:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Insert Length: 676 Std Error: 0.00
Plate: 2 row: B column: 03
Seq primer: T7R; CTAATACGACTCACTATAGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Max-Planck-Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADIS DNA core facility at MPIZ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Contact: Weisshaar B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Genome Res. 13 (6), 1250-1257 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: weisshaa@mpiz-koeln.mpg.de
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Fax: 0049221506285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Carl-von-Linne Weg 10, 50829 Koeln,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAA 360
                                                                                                                                                                                                               TGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCT
                                                                                                                                                                                                                                                                                                                                                                         TCGTTCCTCTCTGTGTGTGGTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CIGATATITATITICITACCITAAATACGACGGTGCTTCACTGAGTCCGACTCAGTTAAC 60
                                                                   TGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCT
                                                                                                   TGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCT
                                                                                                                                                                                                                                                                                                                   TCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGT 180
                                                                                                                                                                                                                                                                                                                                                                                                                 rcgrrccrcrcrcrcrcrcrcrcrcrcrrcrcragaccaccaccaccataarccaccaccacca 120
                                                                                                                                                                                                                                                                  TCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Research, Cologne, Germany; cloning sites Sall-NotI, primer sites and orientation:
T7-Sall-CCACGCGTCCG-5prime-cDNA-polyA-CC-NotI-SP6; Note:
Sequencing granted in the context of the GABI Arabidopsis
Verbund I: Genetic Diversity, 'Establishment of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="Vector: psponding of the provided History from Arabidopsis thaliana, accession Cvi, six weeks old total plants grown under long-day conditions in soil, whole adult plants were treated for 24 hours with different stresses, (1) at 4 Grad C in the dark, (2), at 37 Grad C in the dark, (3) lying in the lab after removing from soil, (4) in the greenhouse after wounding leaves with a foreceps, (5) in the lab watering with a 150 mM NaCl solution, (6) at 26 Grad C in the light/UV, equal quantities of stressed plant material were pooled; library was made at the Max-Planck-Institute for Plant Breeding perserved.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  high-efficiency SNP-based mapping tools and development of methods for genome-wide mutation detection, PI: Bernd Weisshaar Sequence submission managed by RZPD/GABI-Primary database: http://gabi.rzpd.de. This clone is available
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /cultivar="Cape Verde
/db_xref="GABI:590722"
/db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            from RZPD; contact RZPD (clone@rzpd.de)
information."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone="MPIZp771B032Q"
/tissue_type="whole_pl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                dev_stage="adult plant,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            host="E. coli TOP10"
ie_lib="MPIZ-ADIS-014"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               for Plant Breeding Research
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 671.2;
Pred. No. 4.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        plant"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4.8e-162;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mixed stresses"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 676;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                      300
                                                                                                                                                                    240
                                                                                                                                                                                                                       240
                                                                                                                                                                                                                                                                        180
                                                                                                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
```

214

```
ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 7
BM985508
              S
                                                      밁
                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                 Matches 720;
                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                               source
              1391 AGTGGAAATGGTCTTCTGCTGAAGGGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTA 1450
                                                                                     1331 CTGATIGTTTTTGAATCCCCGACCTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGT 1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gong, Z., Zhu, J., Zhang, C., Kim, C.S., Zhang, Q., Bressan, R., Hasegawa, M., Zhu, J.K. and Fredricksen, M.A.

Transcript profile from Thellungiella halophila, a salt-tolerant relative of Arabidopsis thaliana
unpublished (2000)

Contact: Mark Fredricksen
Department of Plant Biology
University of Illinois
University of Illinois
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnollophyta; eudicotyledoms; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Thellungiella.

1 (bases 1 to 806)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Thellungiella halophila
Thellungiella halophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BM985508 806 bp mRNA linear EST 22-MAR-2002 10_F12_T Ath Thellungiella halophila cDNA clone 10_F12_T similar to X86777 - A.thaliana mRNA for pyrroline-5-carboxylate synthetase A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BM985508
BM985508.1 GI:19684146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  201 W. Gregory Dr., Urbana, IL 61801, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGAACTGAAAGCTGAT 676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAACTGAAAGCTGAT 676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGG 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATATCAGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 217265547
                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                  bohnertlab@life.uiuc.edu.
Location/Qualifiers
                                                                                                                                                                                                                                                                               /mol_type="mRNA"
/db_xref="taxon:98038"
/clone="10_F12_T"
/clone_lib="Ath"
                                                                                                                                                                                                                                                                                                                                                                                                 1. .806
                                                                                                                                                                                                                                                         /note="Vector: pBK-CMV phagemid"
                                                                                                                                                                                                                                                                                                                                                                     organism="Thellungiella halophila"
                                                                                                                                                                 25.9%;
93.1%;
                                                                                                                                              0; Mismatches 49; Indels 4; Gaps
                                                                                                                                                                    Score 666.6; DB 12; Length 806; Pred. No. 7.7e-161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                              Ŋ
                                                                                                                                                                                                                                                                                                                                                 VERSION
KEYWORDS
SOURCE '
ORGANISM
                                                                                                                                                                                                                                    REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 8
CB257853
LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                 JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1451 CACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAAACTCATTGGACTTGTG 1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       752 TTCCAC-ACGCAAGCACAAGATTCTCAGATGGGGCTCGATTTGGACTTGGTGC 803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         95
ADIS DNA core facility at MPIZ
ADIS DNA core facility at MPIZ
Max-Planck-Institute for Plant Breeding Research
Carl-von-Linne Meg 10, 50829 Koeln, Germany
                                                                                                                                              Schmid, K.J., Soerensen, T.R., Stracke, R., Torjek, O., Altmann, T. Mitchell-Olds, T. and Weisshaar, B. Large-scale identification and analysis of genome-wide single-nucleotide polymorphisms for mapping in Arabidopsis tha Genome Res. 13 (6), 1250-1257 (2003)
                                                                                                                                                                                                                                                                          Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                    Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                 TSE
                                                                                                                                                                                                                                                                                                                                                                                                                                       clone MPIZp7710244Q 5-PRIME, mRNA sequence.
CB257853
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CB257853 654 bp mRNA linear EST 06-NOV-2000 96-E011802-014-004-024-T7R MPIZ-ADIS-014 Arabidopsis thaliana cDNA
                                                                              Contact: Weisshaar
                                                                                                                                                                                                                                                                                                                                                                       Arabidopsis thaliana (thale cress)
                                                                                                                                                                                                                                                                                                                                                                                                                    CB257853.1 GI:32882626
                                                                                                   12799357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGGTGC 2103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGACAGAGGATACCGAAAGTGCAGAGCTATTCCTTCGCCAAGTGGACAGCGCTGCTGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGAA 1930
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGTCATGCTGATGGAATCTGTCATGGTATATGTCGACAAGGCTTGTGATACGGATATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAGTAAGATACTGAACATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GACGTTTACGGTGCTATAGATCACATTCACCGACATGGGAGTGCGCACACAGATTGCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGCACGGTCGATCAACTATGAGTACTGTTCCAAGGCTTGCACCGTTGAAGTTGTAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGAGCAATGGAGTCACTGTATATGGTGGACCAAGAGCAAGTGCAATACTGAACATACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTCTTGTGCATAAGGATCTAGAGCAGAA----CGGGCTCAATGAGCTTATTTTTGTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTATTTTTGCTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGCGCATAATTTCCGATGCAAAGTTGGATTATCCAGCAGCCTGTAATGCGATGGAAACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAACC 1750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGCCATGCTGATGGAATCTGTCATGTATATGTCGACAAGTCATGTAATCTGGATATGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCAAGAGGCAGCAACAAGCTTGTTTCCCAGATAAAAAATACTACAAAAAATCCCTGTGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAAATACTACAAAAAATCCCTGTGCTA 1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTTCAAGAGAGAGATTCCTGATTTGCTCAAGCTTGATGACGTTATAGATCTTGTGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACTTCAAGAGAAGAGTTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGATC 1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGTGGAAATGGTCTTCTATTGAAGGGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTA
                                                                                                                                                                                                                                                       (bases 1 to 654)
                                                                                                                                                                      in Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST 06-NOV-2003
```

751

691

1990

631

571

1870

1810 454

511

1690 334

Fax: 00492215062851

```
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 654;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                               301
361
                                                                                                                                                                       546
                                                                                                                                                                                                                              241
                                                                                                                                                                                                                                                                                      486
                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                         426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    246 AATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCTTGGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Insert Length: 654 Std Error: 0.00 Plate: 4 row: 0 column: 24 Seq primer: T7R; CTAATACGACTCACTATAGGGA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: weisshaa@mpiz-koeln.mpg.de
AGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTTGGAAC
                              AGGATTCTTCTGGTATTTTCTGGGATAACGATAGCTTAGCTGCTCTACTGGCGTTGGAAC
                                                                                                               TGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGAGCCCCATATC
                                                                                                                                                                 TGAGGGTTATTCCAATTTCCAATGAGAATGATGATGCTATTAGCACCCGAAGAGCCCCATATC
                                                                                                                                                                                                                              GTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCTTGATT
                                                                                                                                                                                                                                                                                   GTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCTTGATT
                                                                                                                                                                                                                                                                                                                                              ATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGACAGTA
                                                                                                                                                                                                                                                                                                                                                                                               ATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGACAGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGACTGAACTTGATGGGAAAGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGCTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGACTGAACTTGATGGGAAGGCTTGTGCTGCTGTTGGACAAAGCAGTCTTATGGCTTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAAGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAAGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                weeks old total plants grown under long-day conditions in soil, whole adult plants were treated for 24 hours with different stresses, (1) at 4 Grad C in the dark, (2) at 37 Grad C in the dark, (3) lying in the lab after removing from soil, (4) in the greenhouse after wounding leaves with a foreeps, (5) in the lab watering with a 150 mM NaCl solution, (6) at 26 Grad C in the light/UV; equal quantities of stressed plant material were pooled; library was made at the Max-Planck-Institute for Plant Breeding Research, Cologne, Germany; cloning sites SalI-NotI, primer sites and orientation:

T7-SalI-CCAGGGTCG-Sprime-cDNA-polyA-CC-NotI-SP6; Note: Sequencing granted in the context of the GABI Arabidopsis verbund I: Genetic Diversity, 'Establishment of high-efficiency SNP-based mapping tools and development of methods for genome-wide mutation detection, PI: Bernd Weisshaar Sequence submission managed by RZPD/GABI-Primary database: http://gabi.rzpd.de. This clone is available inform RZPD; contact RZPD (clone@rzpd.de) for further
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    information
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /tissue_type="whole plant"
/dev_stage="adult plant, mixed stresses"
/lab_host="E. coli TOP10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone_lib="MPIZ-ADIS-014"

note="Vector: pSPORT1; Site_1: SalI; Site_2: NotI; cDNA
library from Arabidopsis thaliana, accession Cvi; six
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         db_xref="GABI:5921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mol_type="mRNA"
cultivar="Cape Verde Island (Cvi)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25.4%; L
100.0%; Pre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           one="MPIZp7710244Q"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             xref="taxon:3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 654; DB 14; I
; Pred. No. 1.3e-157;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 654;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0
420
                                                    665
                                                                                                            360
                                                                                                                                                                       605
                                                                                                                                                                                                                                                                                   545
                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   120
```

밁

8 B δ

В

В

ş

맑 Ś 밁

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 9
AY105865
Ś
                                                  B
                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POCUS
                                                                                                                                                    Matches 918;
                                                                                                                                                                           Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
  974 ATCACAGATTCTAATGCTCGTGACATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTT 1033
                                                                                                 914 GTCCTCAGAGGACTACGTGTTGGAACCTTGTTTCATCAAGATGCTCGTTTATGGGCTCCG 973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    726
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421 TGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTACACAGGCCCTCCAA 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                846 TCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTG 899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                666 TGAAAGCTGATCTTCTGATTCTTCTGAGCGATGTTGAAGGTCTTTACACAGGCCCTCCAA 725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (25-APR-2002) Maize Mapping Project, University of Missouri, Columbia, MO 65211, USA

If you are interested in getting corresponding physical clones, these are publicly available from ZmDB and may be found by BLAST searching at MSL, maizemap.org; ZmDB, www.rmdb.iastate.edu; TIGR, www.ntigr.org; OrUSI, www.ncbi.nlm.nih.gov. When the source of the maize cDNA sequences is either Virginia Walbot, Stanford or Pat Schnable, Iowa State, then clones may be requested from ZmDB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hainey, C.F., Dolan, M., Miao, G.H., Vogel, J.M., Whitsitt, M.S., Arthur, L.W., Hanafey, M., Morgante, M. and Tingey, S.V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             www.zmdb.iastate.edu.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Maize Mapping Project/DuPont Consensus Sequences for Design of
Overgo Probes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Zea mays PCO085448 mRNA sequence.
AY105865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AY105865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Coe, E.H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Lillopsida; Poales; Poaceae; PACCAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zea mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AY105865.1 GI:21208943
                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              lade; Panicoideae; Andropogoneae; Zea.
                                                  GTTCTCAAAGGCGAAAAGATCGGTACACTTTTCCACAACGAAGCAAATTTGTGGGCATGT 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCAATGCAGCTTATGCTGGGATTCCTGTCATCATAACCAGTGGGTATTCAGCTG 654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGAGATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CATTCGGCGACAAATCAAGATTAGGGAGAGGGGGGTATGACTGCAAAAGTCAAAGCTGCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGATCCTAACTCAAAGTTGATCCACACTTTTGTTAAAGAAAAACATCAAGATGAGATTA 785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 1685)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 1685
                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                          /note-"this sequence is part of a project of EST assemblies resulting from the application of was contigs to seed DuPont contigs; this resource was assembled by DuPont as part of a collaboration for the overgo addressing of BACs in conjunction with the Maize
                                                                                                                                                                                                                                                                        Mapping Project"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="MaizeDB:634799"
/db_xref="taxon:4577"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Zea mays"
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (2002)
                                                                                                                                              25.4%; Score 653.4; DB 11; Length 1685; 67.5%; Pred. No. 2.3e-157; tive 0; Mismatches 441; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    lib="Maize Mapping Project/DuPont Cornsensus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1685 ბდ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HTC 16-OCT-2002
                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       845
```

```
2054 CACAACGCCAGCAAGATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1754
1151 CATAATGCAÁGCÁCAAGGTTTTGTGÁTGGGACGCGTTTTTGGGCTAGGTGCTGÁGGTTGGC 1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1634 CATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATACGGATATGGCAAAG 1693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1874 GCACGGTCATTCAACCATGAGTACTGTGCCCAAGGCTTGCACTGTTGAAGTTGTAGAAGAC 1933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1694 CGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAACCCTT 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1514 TCAAGAGAAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGATCCCA 1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1454 AAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAAACTCATTGGACTTGTGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1214 GCAGCTTCAGTTCGTAAGCTAGCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAA 1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    911 AAGGAAGGAGTAGTTATTTATGGTGGACCTGTTGCACATGACAAGTTGAAAGTACCAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      611 AGCAAAGAGGAAATTGCTGATCTACTAGCGCTTGATGATGTAATTGATCTTGTCATTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71
                                                                                                                                                                                                                                               ACAACTGATAGAAGTGCTGCAGAGGCCTTTCTGCAGCAAGTTGATAGTGCCGCTGTGTTT 1150
                                                                                                                                                                                                                                                                                                                                                                ACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTGTTC 2053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTAGACTCATTTCGTCATGAGTÁTAGCTCAATGGCATGCACAGTCGAATTTGTTGATGAT 1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAGTAAGATACTGAACATACCAGAA 1873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTGTTCATAAAGATCTTAACAAGAGTGAGGGACTTGATGATCTATTAGTGGAACTTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTATTTTTGCTCTGCAG 1813
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CATGCTGATGGTATCTGCCATGTTTACATTGACAAATCAGCCGACATGGATATGGCAAAA 790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAGGTAGTAAGTCTCTAGTTTCCCAAATCAAAGCAACTAAGATTCCAGTTTTAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       АGAGGAAGCAACCTTGTTACTCAGATAAAAAATACTACAAAAATCCCTGTGCTAGGT 1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ссяльнісстстогостсяносстосьнае подпоснаем подпостаностью подпостанов подпоснаем подпостанов подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпоснаем подпосн
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTATTTTGAGTCTCGTCCTGATGCATTGGTCCAGATTGCATCTCTAGCGATCCGAAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACAGAGGTGGCAGATGGTCTTGTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTG 1333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGTTGGAAGAGTCAATGGTGGCTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAAATGTTACTACAATCAAAGCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCT 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGAAGTTGTCATCAGAGGAACGCAAACAGATTTTGCTAGATATTGCTGATGCTCTGGAA 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAGGCCTTATCTTCGGAAGACAGGAAAAAAATTCTGCTTGATATTTGCCGATGCCCTTGAA 1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGGATAGTATTGGATGCTAAGATTGATTATCCAGCAGCATGTAATGCAATGGAAACACTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGGTCATAACTGGAGTTATTCCCGATACTGTTGGCAAAAAGCTCATAGGCCTTGTGACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GGTAATGGTCTCCTTTTGAAAGGAGGGAAAGAAGTTATGAGATCAAATGCAATATTACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTGTTTTTGAATCCCGACCTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCAAATGAGGATGCAATTATGTCTGAAAATGATGCCGATGTTGAGGCAGCAAGTTGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAGAGGTTGCTAAAGATCTGGTTTTTGAGAAAGCATATTGCCCCATTGGGTGTTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCAAGATCCATTCGTAAAACTGCTGACATGGAGGACCCTATTTCCCATACATTGAAAAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GGTTATGAAAAGTCGTTGGTTGCTAGGATGACCCTAAAGCCAGGAAAGATAACAAATCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCCAAGGAAGCTACAGCCCGAGAGAGATGGCAGTTGCGGCAAGAGACTGTTCGAGGCGTCTA 130
                                                                                                                 2113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1213
```

유 성

밁 S В 8 밁 Ś 밁 ঠ 문 Ś 밁 Ś 밁 S 맑 Ś

Ś

8 8

밁

る B る B る B る

밁

8 8 8 8

밁

```
RESULT 10
BE037874
LOCUS
  밁
                                 8
                                                                               뮍
                                                                                                                   S
                                                                                                                                                               밁
                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                Matches 672; Conservative
                                                                                                                                                                                                                                                                                                                                                      Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                          1630 AGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATACGGATATGGC 1689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1271
                                                                                                                                                                                                                                                                                        1450 ACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGTAAACTCATTGGACTTGT 1509
                                                                                                                                                                                                       1510 GACTTCAAGAGAGAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGAT 1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2234 CATCAGGACATTCCCATCCAAGCTTAAACAAGACTTCCG 2272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1211 ATAAGTACAGAGCGCATACATGCCCGCGGACCTGTTGGAGTTGATGGACTTCTAACTACT 1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     83
                                                                                                                                                                                                                                                   œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        698 bp mRNA
AAO5FO) AA Arabidopsis thaliana cDNA 5'
1-pyrroline-5-carboxylate synthetase a,
BE037874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bohnert, H.J., Borchert, C., Brazille, S., Brooks, J., Eaton, M., Ferrea, H., Kawasaki, S., McCollough, A., Michalowski, C.B., Palacio, C., Scara, G., Wheeler, M. and Zepeda, G.R. Functional Genomics of Plant Stress Tolerance Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; endicotyledons; core endicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  An open reading frame exists. 
Insert Length: 1 Std Error:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bio Sciences West room 513,
Tel: 520-621-7982
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: Michalowski, C.B. University of Arizona
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BE037874.1 GI:8332890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: cbm@u.arizona.edu
                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
AGGTCATGCTGATGGAATCTGTCATGTATATGTCGACAAGGCTTGTGATACGGATATGGC
                                                                                                       CCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAAATACTACAAAAAATCCCCTGTGCT
                                                                                                                                                                 GACTTCAAGAGAAGATTCCTGATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGAT
                                                                               CCCAAGAGGAAGCAACAAGCTTGTTACTCAGATAAAAAATACTACAAAAAATCCCTGTGCT
                                                                                                                                                                                                                                                 ACACAAGGTGATCACTGATGCAATTCCAGAGACTGTTGGGGGGTAAACTCATTGGACTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGCTGCATTTTGCGCGGTAGTGGACAAGTGGTGAATGGTGACAAGGGAGTGGTTTACACC 1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGATGGATAATGAGAGGAAAAAGGACAAGTTGTCGACGGAGACAATGGAATTGTTTACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CACAAGGATCTTCCTTTGCAATGAGGCAAATAACCTCCG 1369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 698)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             520-621-1697
                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:3702"
/tissue_type="leaves, flo
/dev_stage="12 weeks"
/clone_lib="AA"
/note="20 h_200mM_NaCl"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ngth: 1 Std Error:
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /mol_type="mRNA"
/cultivar="Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          . 698
                                                                                                                                                                                                                                                                                                                                                    24.9%; Score 639.2; DB 10; 97.1%; Pred. No. 8.9e-154;
                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tucson, AZ 85721, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  flowering plants"
                                                                                                                                                                                                                                                                                                                                18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N linear EST 07-JUN-2000 similar to delta mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                        Length 698;
                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                 127
                                                                               187
                                                                                                                         1629
                                                                                                                                                                                                                                                   67
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 11
AV560359
                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Вb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                          DEMED
                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2050 GTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGA-GG 2108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1990 TGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGT 2049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 (bases 1 to 619)

Asamiru, E., Makamura, Y., Sato, S. and Tabata, S.

A large scale analysis of cDNA in Arabidopsis thaliana: Generation of 12,028 non-redundant expressed sequence tags from normalized and size selected cDNA libraries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
Eukaryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta,
Spermatophyta, Magnoliophyta, eudicotyledons, core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AV560359 Arabidopsis thaliana green siliques Columbia Arabidopsis thaliana green siliques Columbia Arabidopsis thaliana cDNA clone SQ133e03F 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AV560359.1 GI:8731785
                                                                                                                                                                                                                                                                                                                                                    Kazusa DNA Research Institute
                                                                                                                                                                                                                                                                                                                                                                         The First Laboratory
                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Erika Asamizu
                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA Res. 7 (3), 175-180 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTGGGAATGAACGGTCTGGATTCATGTTTGT 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGGGGGTAAGCACGGGCAGGATCCATGCTCGT 2140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCAGAGCAATGGAGTCACTTTGTATGGTGGACCAAGGGCAAGTAAGATACTGAACATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTATTTTTGCTCT 1809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAAC 1749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCACGTGGATAGCGCTGTTGT 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCAGAGCAATGGAGTCACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTTCTTGTGCATAAGGATCTAGAGCAGAATGCTGTGCTTAATGAGCTTATTTTTGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAAGCGCATAGTTTCTGATGCAAAGTTGGACTATCCAGCAGCCTGTAATGCGATGGAAAC 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAAGCACGGTCATTCAACCATGAGTACTGTGCCAAGGCTTGCACTGTTGAAGTTGTAGA 1929
                                                                                                                                                                                                                                                                                                     1532-3, Kisarazu, Chiba 292-0812, Japan
l: asamizu@kazusa.or.jp, URL:http://www.kazusa.or.jp/en/plant/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                               /tissue_type="green siliques"
/clone_lib="Arabidopsis thaliana green siliques Columbia"
/note="Vector: pBluescriptII SK-; Site_1: EcoRI; Site_2:
                                                                                                                                                                                               /mol_type="mRNA"
/strain="Columbia"
                                                                                                                                                                                                                                         organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                       lone≃"SQ133e03F"
                                                                                                                                                                          _xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                       for Plant Gene Research
  Score 619;
  멾
  9
Length 619;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST 07-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1869
```

```
RESULT 12
CB257169
                                                                                                                                                                                                                                                                                                                                                           VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                 COMMENT
                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                         MEDLINE
                                                                                                                           JOURNAL
                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1053 ACAGGAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCA 1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     933 TTGGAACCTTGTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601 ATTTGCTTAAGCTTGATGA 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               619;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 GTGACATGGCAGTTGCTGCGAGGGGAAAGTTCCAGGAAAGCTTCAGGCCTTATCTTCGGAAG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 TTGGAACCTTGTTTCATCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTC
ADIS DNA core facility at MPIZ
Max-Planck-Institute for Plant Breeding Research
Carl-von-Linne Weg 10, 50829 Koeln, Germany
                                                                                                                         Large-scale identification and analysis of genome-wide single-nucleotide polymorphisms for mapping in Arabidopsis thaliana Genome Res. 13 (6), 1250-1257 (2003)
                                                                                                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                   Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                      CB257169 648 bp mRNA linear EST 06-NOV-200:
42-E012743-027-007-D11-T7R MPIZ-ADIS-027 Arabidopsis thaliana cDNA
clone MPIZP772D117Q 5-PRIME, mRNA sequence.
                                                                                                                                                                                       Schmid, K.J., Soerensen, T.R., Stracke, R., Torjek, O., Altmann, T. Mitchell-Olds, T. and Weisshaar, B.
                                                              Contact: Weisshaar B
                                                                                                                                                                                                                                                                                                                                                                               CB257169.1 GI:32881942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTTGCTTAAGCTTGATGA 1551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAGCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACAGGAAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTCCAGAGACTGTTGGGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAAGAGATTCCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGGGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAA 1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGA 1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGTCTTAGAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAGCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGCTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGCTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAAGC 1232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAGCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGACATGGCAGTTGCTGCGAGGGAAAGTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAG 1052
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGA
                                                                                                                                                                                                                           (bases 1 to 648)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               °.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. 1.4e-148;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EST 06-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       992
```

```
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                     S
                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 634;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                       1114 AGCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGT 1173
                                                                                                                                                                                        1234 AGCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCT 1293
                                                                                                                                                                                                                                                                                                                   1174 GGCTCGCTTAGTTATGACACCTGGAAAGATCTCGAGCCTTGCAGCTTCAGTTCGTAAGCT 1233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1054 САССАЛАЛАЛІТСІССТІСАТАТІССССАТСССІТСЛАССАЛАГСТАСТАСЛАГСЛА 1113
                                                                                                                                                                                                                                                                                                                                                                                    192 AGCTGAGAATGAGTTAGATGTAGCTTCTGCACAAGAGGCTGGGTTGGAAGAGTCAATGGT 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               132 CAGGAAAAAATTCTGCTTGATATTGCCGATGCCCTTGAAGCAAATGTTACTACAATCAA 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    994 TGACATGGCAGTTGCTGCGAGGGAAAGTTTCCAGAAAGCTTCAGGCCTTATCTTCGGAAGA 1053
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      935 GGAACCTTGTTTCA-TCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         12 GGAACCTTGTTTCACTCAAGATGCTCGTTTATGGGCTCCGATCACAGATTCTAATGCTCG 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: weisshaa@mpiz-koeln.mpg.de
Insert Length: 648 Std Error: 0.00
Plate: 7 row: D column: 11
Seg primer: TTR; CTAATACGACTCACTATAGGGA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fax: 00492215062851
TGTCTTANAGAAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACC 431
                                         TGTCTTAGAGAGACCTCATCACCATTAGGCGTACTTCTGATTGTTTTTGAATCCCGACC 1353
                                                                                                                           AGCTGATATGGAAGATCCAATCGGCCGTGTTTTAAAGAAAACAGAGGTGGCAGATGGTCT 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone_lib="MPIZ-ADIS-027"
/note="Vector: pSPORT; Site_1: Sali; Site_2: Noti; cDNA ibrary from Arabidopsis thaliana, accession Bifel-2; ten week old total plants grown under long-day conditions in soil, whole adult plants were treated for 24 hours with different stresses (1) at 4M-0 C in the dark, (2) at 37 Grad C in the dark, (3) lying in the lab after removing from soil, (4) in the greenhouse after wounding leaves with a foreceps, (5) in the lab watering with a 150 mM NaCl solution, (6) at 26 M-0C in the light/UV; equal quantities of stressed plant material were pooled; library was made at the Max-Planck-Institute for Plant Breeding Research, Cologne, Germany; cloning sites Sali-Noti, primer sites and orientation:
T7-Sali-CCACGCGTCCG-Sprime-CDNA-polyA-CC-Noti-SP6; Note:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequencing granted in the context of the GABI Arabidopsis Verbund I: Genetic Diversity, 'Establishment of high-efficiency SNP-based mapping tools and development of methods for genome-wide mutation detection' PI: Bernd weisshaar Sequence submission managed by RZPD/GABI-Primary database: http://gabi.rzpd.de. This clone is available from RZPD; contact RZPD (clone@rzpd.de) for further
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           information."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="whole plant"
/dev_stage="adult plant, mixed stresses"
/lab_host="E. coli TOP10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  clone="MPIZp772D117Q"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /cultivar="Eifel-2 (Ei-2)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                db_xref="GABI:592948"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _type="mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 612; DB 14; Length 648; Pred. No. 9.3e-147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
```

```
REFERENCE
AUTHORS
용
                                          Ś
                                                                                                 밁
                                                                                                                                         Ś
                                                                                                                                                                                              밁
                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AV523699/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                Matches 597;
                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                     Match 23.2%;
Local Similarity 99.8%;
                                                                                                                                                                                                                                                2042 GCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGGT 2101
                                                                                                                                                 1982 GACTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGC 2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1354 TGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAA 1413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1474 TCCAGAGACTGTT-GGGGTAAACTCATTGGACTTGTGACTTCAAGAGAGAAGAGTTCCTG 1532
478 GCTGCTGTGTTCCACAACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTTGGACTTGGT 419
                                                                                                    538 GATTGCATTGTGACAGAGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGC 479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           432 TGATGCACTTGTACAGATAGCTTCACTTGCCATCCGTAGTGGAAATGGTCTTCTGCTGAA 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             612 ATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGAT 648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The First Laboratory for Plant Gene Research
Kazusa DNA Research Institute
Yana 1532-3, Kisarazu, Chiba 292-0812, Japan
Email: asamizu@kazusa.or.jp, URL:http://www.kazusa.or.jp/en/plant/.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 598)

Asamizu, E., Nakamura, Y., Sato, S. and Tabata, S.
A large scale analysis of cDNA in Arabidopsis thaliana: Generation of 12,028 non-redundant expressed sequence tags from normalized and size-selected cDNA libraries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AV523699 Arabidopsis thaliana aboveground organs two to six-week old Arabidopsis thaliana cDNA clone APZL37a01F 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA Res. 7 (3), 175-180 (2000)
20363093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Erika Asamizu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rosids; eurosids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AV523699.1 GI:8683227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AV523699
                                                                                                                                                                                                   ATTTGCTTAAGCTTGATGACGTTATCGATCTTGTGAT 1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGTGGAAAAGGCCCCGGCGATCAAATGCTATCTTACACAAAGGTGATCACTGATGCAAT 1473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGGTGGAAAGGAGGCCCGGCGATCAAATGCTATCTTACACAAGGTGATCACTGATGCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCCAGAGACTGTTGGGGGGTAAACTCATTGGACTTGTGACTTCAAGAGAAGAGATTCCTG
                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="aboveground organs"
/dev stage="two to six-week old"
/clone_lib="Arabidopsis thaliana aboveground organs two to
six-week old"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:3702"
/clone="APZL37a01F"
                                                                                                                                                                                                                                                                                                                                                                                                                                               note="Vector: pBluescriptII SK-; Site_1: EcoRI; Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      strain="Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             II; Brassicales; Brassicaceae; Arabidopsis
                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                     Score 596.4; DB 9;
Pred. No. 9.8e-143;
                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                          Length 598;
                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EST 01-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           551
```

```
RESULT 14
CB258886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PUBMED
                                                                                                                                                                                                                                                                        source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2102 GCAGAGGTGGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGGGTCGAAGGA 2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2162 TTACTTACAACGAGATGGATAATGAGAGGAGAAAGGACAAGTTGTCGACGGAGACAATGGA 2221
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arabidopsis thaliana (thale cress)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CB258886

09-E012732-014-002-A03-T7R MPIZ-ADIS-014 Arabidopsis thaliana cDNA colone MPIZP771A032Q 5-PRIME, mRNA sequence.
                                                                                                                                                                                                                                                                                                                Email: weisshaa@mpiz-koeln.mpg.de
Insert Length: 595 Std Error: 0.00
Plate: 2 row: A column: 03
Seq primer: T7R; CTAATACGACTCACTATAGGGA.
                                                                                                                                                                                                                                                                                                                                                                                                                              ADIS DNA core facility at MPIZ
Max-Planck-Institute for Plant Breeding Research
Carl-von-Line Weg 10, 50829 Koeln, Germany
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Contact: Weisshaar B ADIS DNA core facilit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Large-scale identification and analysis of genome-wide single-nucleotide polymorphisms for mapping in Arabidopsis thaliana Genome Res. 13 (6), 1250-1257 (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Schmid, K.J., Soerensen, T.R., Stracke, R., Torjek, O., Altmann, T., Mitchell-Olds, T. and Weisshaar, B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CB258886.1 GI:32883659
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCAGAGGTGGGGTAAGCACGGGCAGGATCCATGCTCGTGGTCCAGTCGGGGTCGAAGGA 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CCACTTAGTCTTGCTCATAAGTACGATGAAGAACATTTAATTAGCTTCTCTTCTTGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCGCTTATGTAGTGGTTTTGATTTAGGGTTAGGATTGCACCAAAAATAAGATCCACTTTA 2461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCACTTAGTCTTGCTCATAAGTACGATGAAGAACATTTAATTAGCTTCTTCTTCTTGTC 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGCTTATGTAGTGGTTTTGATTTAGGGTTAGGATTGCACCAAAAATAAGATCCACTTTA 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGTGTATTTGGTTGAGACTTGAGGAGAGACACAGAGGAGGATGGGCTTTTTTGTTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTACTTACAACGAGATGGATAATGAGAGGAAAAGGACAAGTTGTCGACGGAGACAATGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (bases 1 to 595)
                                                                                                                                                                                                                                                                                                                                                                                                                  00492215062851
/clone_llb="MP16-AD15-V14"
/note="Vector: pSPORT1; Site_1: Sall; Site_2: Not1; cDNA
                                                                                                                                                                                                                      /organism="Arabidopsis thaliana"
/mol_type="mRNA"
                                /clone="MPIZp771A032Q"
/clssue_type="whole plant"
/dev_stage="adult plant, mixed stresses"
/dev_stage="adult plant, mixed stresses"
/dev_stage="col1 TOPIO"
/clone_lib="MPIZ-ADIS-014"
                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                /mol_type="mRNA"
/cultivar="Cape Verde Island (Cvi)"
                                                                                                                                                                         db_xref="GABI:590719"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    179
```

library from Arabidopsis thaliana, accession Cvi; six weeks old total plants grown under long-day conditions in soil, whole adult plants were treated for 24 hours with different stresses, (1) at 4 Grad C in the dark, (2), at 37 Grad C in the dark, (3) lying in the lab after removing from soil, (4) in the greenhouse after wounding leaves with a foreceps, (5) in the lab watering with a 150 mM NaCl solution, (6) at 26 Grad C in the light/UV; equal quantities of stressed plant material were pooled; library was made at the Max-Planck-Institute for Plant Breeding Research, Cologne, Germany; cloning sites Sall-Noti, primer sites and orientation: 17-Sall-CCACGCGTCCG-5prime-cDNA-polyA-CC-NotI-SP6; Note: Sequencing granted in the context of the GABI Arabidopsis verbund I: Genetic Diversity, 'Establishment of high-efficiency SNP-based mapping tools and development of methods for genome-wide mutation detection', PI: Bernd Weisshaar Sequence submission managed by RZPD/GABI-Primary database: http://gabi.rzpd.de. This clone is available from RZPD; contact RZPD (clone@rzpd.de) for further information."

Matches Query Match Y Match 23.0%; Local Similarity 99.7%; 481 481 421 421 361 301 301 241 181 121 TCGTTCACGTGCTTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGT 180 241 61 593; 1 CTGATATTTATTTTCTTACCTTAAATACGACGGTGCTTCACTGAGTCCGACTCAGTTAAC TGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGATTAGCACCCGAAGA 595 GCCTCAGACTGAACTTGATGGGAAGGCTTGTGCTGGTGTTGGACAAAGCAGTCTTATGGC 420 TGTTACTGGAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCT TCGTTCCTCTCTGTGTGTGGTTTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGA TCGTTCCTCTCTCTGTGTGTGTTTGGTAGACGACGACGACGATAATGGAGGAGCTAGA 120 CTGATATTTATTTTCTTACCTTAAACACGACGCTGCTTCAGTGAGTCCGACTCAGTTAAC CAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCT CAGTAGTTTTAGAGACAAGGATTTCAGGAAGCAACTTAATGAAACTGTCAAGTCTATGCT 540 TTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGA TTACTATGAGACTATGTTTGACCAGCTTGATGTGACGGCAGCTCAACTTCTGGTGAATGA 480 TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGATCTTCAGAA TGGCAGGCAAAGGCTTCGTTATCGACAATTAGTCAATAGCAGCTTTGCGGGATCTTCAGAA 360 TGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCT TGCGGAATTAAACTCGGATGGATTTGAGGTGATATTGGTGTCATCTGGTGCGGTTGGTCT 300 TGTTACTGGAAAAAGGTGGAAGATTGGCTCTTGGTCGTTTAGGAGCACTGTGTGAACAGCT TCGTTCACGTGCTTTTGCCAGAGACGTCAAACGTATCGTCGTTAAGGTTGGGACAGCAGT Conservative 0 Score 591.8; DB 14 Pred. No. 1.5e-141; Mismatches DB 14; Length Indels ٥, Gaps

240 240

300

60

0

RESULT 15 BU635444 LOCUS DEFINITION

片 Ś 윰 ş 밁 Ś 밁 Ś 밁 Ś 밁 Ś 밁 S 맑 S 맑

BU635444 023B04 II sequence 1944 S91 bp mRNA linear E Infected Arabidopsis Leaf Arabidopsis thaliana EST 23-SEP-2002 CDNA,

TGATTTGAGGGTTATTCCAATTTTCAATGAGAATGATGCTATTAGCACCCGAAGA 595

480

```
ACCESSION
VERSION
KEYWORDS
                                            밁
                                                                         δ
                                                                                                                        밁
                                                                                                                                                          Ś
                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                吊
                                                                                                                                                                                                                                                                                                                                                                                                    ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity 99.7 Matches 572; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
2358
                                                                                                                                                                                                                             1998 AGGATCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTGTTCCACA 2057
                                                                                                                                                                                                                                                                                                                2058 ACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGGTAA 2117
                                                                                                                          361
                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 ACGAGCACGAAGTTGCAGAGCTATTCCTTCGCCAAGTGGATAGCGCTGCTGTGTTCCACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Arabidopsis thaliana
Arabidopsis thaliana
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; eudicotyledons; core eudicots;
rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Karen G. Welinder
Institut for bioteknologi
Aalborg Universitet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 (bases 1 to 591)
Lundsgaard, M., Emmersen, J., Nielsen, K.L., Wilson, I., Somerville, S. and Welinder, K.G.
EST sequencing of Erysiphe cichoracearum infected Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BU635444
BU635444.1 GI:23302699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Email: kgw@bio.auc.dk.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sohngaardsholmsvej 49, 9000 Aalborg, Denmark
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Arabidopsis thaliana (thale cress)
                                        TTTGATTTAGGGTTAGGATTGCACCAAAAATAAGATCCACTTTACCACTTAGTCTTGCTC
                                                                       TITGATTIAGGGTTAGGATTGCACCAAAAATAAGATCCACTTTACCACTTAGTCTTGCTC 2477
                                                                                                                    TATCCTATCATTATTATTACTACTACTATTATTATTGAAACCCTCGCTTATGTAGTGGT
                                                                                                                                                 TATCCTATCATTATTATTACTACTACTTATTATTGAAACCCTCGCTTATGTAGTGGT 2417
                                                                                                                                                                                                GACTTGAGGAGAGACAGAGGAGGATGGGCTTTTTTGTTTCCTCTCTGCTTAGTACTCA 360
                                                                                                                                                                                                                                                                                                                                                            GGATAATGAGAGGAAAAAGGACAAGTTGTCGACGGAGACAATGGAATTGTTTACACCCCATC
                                                                                                                                                                                                                                                                                                                                                                                                  GGATAATGAGGAGAAAAGGACAAGTTGTCGACGGAGACAATGGAATTGTTTACACCCATC 2237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACGCCAGCACAAGATTCTCAGATGGTTTCCGATTTGGACTTGGTGCAGAGGTGGGGGTAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                        +45 98141808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:3702"
/dev_stage="Plant 3 weeks old, three days post infection"
/clome_lib="Infected Arabidopsis Leaf"
/note="Organ: Leaf; Vector: pBluescript; Mixed cDNA
library of Arabidopsis and E. cichoracearum infected leaf
from three weeks old Arabidopsis plants. Plants were
from three weeks old Arabidopsis plants. Plants were
havested 3 days after infection and mRNA oligo dT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    selected."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Arabidopsis thaliana"
/mol_type="mRNA"
/strain="Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22.2%;
99.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 570.8; DB 13; Length 591; Pred. No. 4e-136; O; Mismatches 2; Indels O;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                        480
                                                                                                                    420
                                                                                                                                                                                                                                                                                                                                                            240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     60
                                                                                                                                                                                                                                                                              300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

•	ф	Ş	В
	541	2538	481 A
	541 ATTTCTGATCTTATCAAGATACTACTACTTTTC 574	2538 ATTTCTGATCTTATCAAGATACTACTACTTTTC 2571	
			40

Search completed: March 10, 2004, 23:46:47 Job time: 5875.85 secs

```
Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           March 10, 2004, 10:31:30; Search time 6881.99 Seconds (without alignments) 11544.306 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              110:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3470272 seqs, 21671516995 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-026-767-3
1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 agcgtttagaaaaaaacagc.....ataaaaatgctttttacttt 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GenEmbl:*
gb ba:*
gb int;
gb ov:*
gb ov:*
gb pat:*
gb pat:*
gb pat:*
gb pr:*
gb pr:*
gb ro:*
gb vi:*
gb vi:*
gb vi:*
em fun:*
em om:*
em om:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em ow:*
em
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6940544
```

Pred. No. is the number of results predicted by chance to have a

score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	4 Л	44	43	42	41	40	39	c 38	w	c 36	ω	c 34	ω	c 32	3 ⊥	c 30	29	28	27	26	សូ	N	c 23	N	21	20	19	18	_	c 16		14	13	121	1 p		C		3 o	ı UT	4.	· w	N		Result No.	•
	Я	S	8	07.	07.	107.2	07.	17.	17.		19.	φ.	19.	9	19.	19.	•	23.	23.		30.	30.	٠	4	151	15	157.8	17	27.	7	40	ហេ	261	3 !	٠,	9 0	י פ		10.	722.	817.	818.	25	183	Score	
		٠	٠	5.8	٠		٠	٠		٠	٠	٠	•	•	•	٠	•	6.7	6.7	6.7	7.1		7.9	•	٠	•	8.6	•	12.4	12.4	13.1	4	14.2	٠.	, c	٠.	1 a	٠, ٠	200	4.	9		9	00	Query Match	٠
	л	წ	4	38	w	2389	ū	N	N	N	N	N	N	N	121	N	12	24	2240	49	N	11		0	2000	0	4	15	044	4	o i	1227	1 13 14 14 14 14 14 14 14 14 14 14 14 14 14	1782	n J	0000	8234/	1		74	1855	85	84	8	Length	
	o	σı	φ	φ	9	σ																			σ	თ	œ	œ	œ	œ :	φ,	σ,	œ (x	0 0	0 0	ο α	σ	٠ o	ω	α	œ	œ	œ	BB	
	9106	676	~	HSU82381	202	7147	AR371474	AX324856	AX324855	AX324868	AX324867	AX324864	AX324863	AX324860	AX324859	AX324852	AX324851	AF120279	AR371478	AR371475	MMU80020	BC037468	ATH524542	AP001296	AX652724	AX509409	AY327888	AB008810	AE017118	AC026758	AP006372	AX653926	AF171226	AK121010	ABOAEA16	75017404	AB028614	0011	AX651553	5950	ă	42830	074	83025	. 0	
,	63 Homo sa	746760 Seguence	754 Human prol	1 Human pro	Ното вај	9 Sequence	Sequenc	Sequenc	Sequenc	Sequenc	Sequenc	Sequenc	Sequenc	Sequenc	Sequenc	Sequenc	Sequence	Mus mo	Sequenc	Seg	us muscu	BC037468 Mus muscu	Arabidop	AP001296 Arabidops	Sequenc	Sequenc	Medicago	Arābidop	Oryza sa	758 Oryza s	6372 Lotus co	53926 Segr	1226 Brassica	AK121010 Orvza sat	OAFATO Migot	ATO PROPRIOTION	410000	506/16 Sequence	51553 Sequenc	508 Ar	075 A.thal	428306	4571 Arabidop	83025 Arabidopsi	ption	

ALIGNMENTS

REFERENCE AUTHORS		ORGANISM	SOURCE	VERSION	ACCESSION	DEFINITION	LOCUS	RESULT 1 D83025
1 (sites) Kiyosue, T., Yoshiba, Y., Yamaguchi-Shinozaki, K. and Shinozaki, K.	Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.	Arabidopsis thaliana	proline oxidase precursor; erd5. Arabidopsis thaliana (thale cress)	D83025.1 GI:1817543	cds. D83025	Arabidopsis thaliana mRNA for proline oxidase precursor, complete	D83025 1833 bp mRNA linear PLN 06-FEB-1999	

```
JOURNAL
REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                     멂
                                                  S
                                                                                       밁
                                                                                                                          Ś
                                                                                                                                                                멼
                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                      В
                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                Matches 1833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                      polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                           121
                     181
                                                      181
                                                                                                                              121
                                                                                                                                                                61
                                                                                                                                                                                                 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (25-DEC-1995) Tomohiro Kiyosue, The Institute of Physical and Chemical Reserch (RIKEN), Tsukuba Life Science Center, Laboratory of Plant Molecular Biology; 31-11 Koyadai, Tsukuba, Ibaraki 305, Japan (E-mail:tkiyosue@rtcs1.riken.go.jp, Tel:81-298-36-4359, Fax:81-298-36-9060)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kiyosue, T., Yoshiba, Y., Yamaguchi-Shinozaki, Y. and Shinozaki, K. Proline oxidase, the first enzyme involved in the conversion of proline to glutamate, in Arabidopsis thaliana: cDNA sequence, gentlession, immunological localization and functional complementation of yeast putl mutation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A nuclear gene encoding mitochondrial proline dehydrogenase, an enzyme involved in proline metabolism, is upregulated by proline but downregulated by dehydration in Arabidopsis

Plant Cell 8 (8), 1323-1335 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kiyosue,
                                          GGGTCCTCCCACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCCTTTGGACA
                                                                                             CCGTCTI
                                                                                                                                                                                          GAGAAATTATTTTTTTTTTTCGTTTTTCAAAAACCAAAATCTTTGAATTTTATGGCAAC
                   CCGTCTTCTCCGAACAAACTTTATCCGGCGATCTTACCCGTTTACCCGCTTTTAGCCCGGT
                                                                                                                                                              GAGAAATTATTTTTTTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTTATGGCAAC
                                                                                                                                                                                                                                      (bases 1 to 1833)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 1833)
                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             / translation="MATRLLRTINFIRRSYRLFAFSPVGPPTVTASTAVVPEILSFGQQ
APEPPLHHPKPTEQSHDGJDLSDQAFLFSSIFTSTAVLFAFSTAVLARAIGEMVDLGTWV
MSSKJANASVTEGMVLGLVKSFTPVDHFCAGEDADAARSVRSVYEATGLKRVSDLLRWEYK
MSSKJANASVTEGMVLGLVKSFTPVDHFCAGEDADAARSVRSVYEATGLKRVSDLLRWEYK
BADDAVSCDDNMQQFIRTIEAAKSLPTSHFSSVVVKITAICPISLKRVSDLLRWEYK
SPNFKJSWKLKSFPVFSSSSFLYHTNSBFPFVTAEERRELAAHGRIOBICRKCOESN
VPLLIDAEDTILQPAIDYMAYSSALIMFNADKDRFIVNTIQAYLRDAGERLHLAVQNA
VPLLIDAEDTILQPAIDYMAYSSALIMFNADKDRFIVNTIQAYLRDAGERLHLAVQNA
SGFGVVLATHADAGSRLASRKASDLGIDKQNGKIEFAQLYGMSDALSFGLKRAGFNVS
                                                                                         CTCCGAACAAACTTTATCCGGCGATCTTACCGTTTACCCGCTTTTAGCCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="erd5"
1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="erd5"
1813. .1818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KYMPFGPVATAIPYLLRRAYENRGMMATGAHDRQLMRMELKRRLIAGIA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="proline oxidase precursor"
/protein_id="BAA11682.1"
/db_xref="GI:1817544"
                                                                                                                                                                                                                                                                                                                                                                                               /gene="erd5"
/note="19 A nucleotides"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="erd5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'gene="erd5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     codon_start=1
                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               _type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               species="Columbia ecotype"
                                                                                                                                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                             Score 1833;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                 멂
                                                                                                                                                                                                                                                                                                            ..
..
                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                               Length 1833;
                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                            <u>,</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gene
                   240
                                                    240
                                                                                         180
                                                                                                                            180
                                                                                                                                                                                                 120
                                                                                                                                                                                                                                      60
                                                                                                                                                              120
Ś
                                                                 S
                                                                                                          밁
                                                                                                                                                                            밁
                                  밁
                                                                                                                                         Ś
                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                      맑
                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                        1081
                                                                                                                                                                                                                                                                                                                                                                                                     961
                                                                                                                                                                                                                                                                                                                                                                                                                                        961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
CGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAA 1380
                                                                                                                               CAAGTCGCCAGTCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGAC
                                                                                                                                                                                CAAGTTGGTGAGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTG
                                                                                                                                                                                                             CAAGTTGGTGAGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTG
                                                                                                                                                                                                                                                                                                                                                   CAATGCTGACAAAGACCGAACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGAGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAACTCAGAACCGGAACCGTTAACCGCGGAAGAAGAAAGGGAAGCTCGAAGCAGCTCATGG
                                                                     ATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTCTCGCAACACATAA
                                                                                                                                                                                                                                                      CGGTGAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAGAATGTTCCTATGGGGTT
                                                                                                                                                                                                                                                                                           CGGTGAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTT
                                                                                                                                                                                                                                                                                                                               CAATGCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGC
                                                                                                                                                                                                                                                                                                                                                                                                   GGAAGACACATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                        GGAAGACACAATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACTCTCATGGAAGCTCAAATCGTTTCCGGGTTTTCTCCGAATCGAGTCCTCTCTACCACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTCTCATGGAAGCTCAAATCGTTTCCGGTTTTCTCCGAATCGAGTCCTCTCTACCACAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TAGTCTTCTGAAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCTTTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGCGTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGCGTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGCTCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCCTTGTGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACCGCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGATCTCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGATCTCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTC 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACAAGCACCGGAACCACCTCTTCACCACCCAAAAACCCACCGAGCAATCTCACGATGGTCT 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TAGTCTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGCTCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTTAGGGCCTTGTGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CACCGCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAAGCACCGGAACCACCTCTTCACCACCCAAAACCCCACCGAGCAATCTCACGATGGTCT
                                                                                                                                                                                                                                                                                                                                                                1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            540
                                                                                                          1260
                                                                                                                                                                                1200
                                                                                                                                                                                                                                                                                           1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                             1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                             1260
                                                                                                                                                                                                                     1200
                                                                                                                                                                                                                                                                                                                                                                                                     1020
                                                                                                                                                                                                                                                                                                                                                                                                                                        1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 2
AY074571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                      TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1801 ATTCACCTTATCAATAAAATGCTTTTACTTT 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1501
                                                                                                  2 (bases 1 to 1841)
Shinn, P., Chen, H., Cheuk, R., Kim, C.J., Meyers, M.C., Banh, J.,
Shinn, P., Cheninci, P., Chang, E., Dale, J.M., Goldsmith, A.D.,
Bowser, L., Carninci, P., Chang, E., Dale, J.M., Goldsmith, A.D.,
Hayashizaki, Y., Ishida, J., Jones, T., Kamiya, A., Karlin-Neumann, G.,
Hayashizaki, Y., Ishida, J., Jin, J., Miranda, M., Narusaka, M.,
Kawai, J., Lam, B., Lee, J.M., Lin, J., Miranda, M., Narusaka, M.,
Mguyen, M., Gonodera, C.S., Palm, C.J., Quach, H., Sakurai, T.,
Satou, M., Seki, M., Southwick, A., Tang, C.C., Toriumi, M., Wu, H.C.,
Yamada, K., Yamamura, Y., Yu, G., Yu, S., Shinozaki, K., Davis, R.W.,
Theologis, A., and Ecker, J.R.
                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 1841)
Shinn, P., Chen, H., Cheuk, R., Kim, C.J., Meyers, M.C., Banh, J.,
Shinn, P., Chen, H., Cheuk, R., Eale, J.M., Goldsmith, A.D.,
Bowser, L., Carninci, P., Chang, E., Dale, J.M., Goldsmith, A.D.,
Hayashizaki, Y., Ishida, J., Jones, T., Kamiya, A., Karlin-Neumann, G.,
Kawai, J., Lam, B., Lee, J.M., Lin, J., Kiranda, M., Narusaka, M.,
Nguyen, M., Condera, C.S., Palm, C.J., Quach, H.L., Sakurai, T.,
Satou, M., Seki, M., Southwick, A., Tang, C.C., Toriumi, M., Wu, H.C.,
Yamada, K., Yamamura, Y., Yu, G., Yu, S., Shinozaki, K., Davis, R.W.,
Theologis, A. and Ecker, J.R.
Arabidopsis cDNA clones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
Arabidopsis thaliana
Eukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; eudicotyledons; core eudicots;
rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AY074571
AY074571.1 GI:18377848
Submitted (14-JAN-2002) Salk Institute Genomic Analysis Laboratory (SIGNAL), Plant Biology Laboratory, The Salk Institute for Biological Studies, 10010 N. Torrey Pines Road, La Jolla, CA 92037
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Arabidopsis thaliana At3g30775/MIF6.16 mRNA, complete cds.
                                                                               Direct Submission
                                                                                                                                                                                                                                                                                                                                     Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTCACCTTATCAATAAAAATGCTTTTTACTTT 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTAAATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTAT 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTAAATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTATCTTCTCCGACGCGTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTTGGACCCGTCGCAACCGCTATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACC 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAA 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAATTGAAAACAAAAAATTATAATAATAAGAAATGGAGTAAGGAACATTTCCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAATTGAAAACAAAAATTATAATATAAGAAATGGAGTAAGAACATTTCCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTATCTTCTCCGACGCGTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATGGAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATGGAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTA 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1841 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLN 27-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1680
                                                                                                                                                                                                                                                                                                                                                              8
                                                   S
                                                                                                          밁
                                                                                                                                                         S
                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
```

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 1827;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5'UTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
241
                                                                                                                 181
                                                                                                                                                                        131
                                                                                                                                                                                                                               121
                                                                                                                                                                                                                                                                                         71
                                                                                                                                                                                                                                                                                                                                             61 GAGAAATTATTTTTTTTTTTTCGTTTTCGAAAAACAAAATCTTTGAATTTTATGGCAAC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RIKEN Genomic Sciences Center (GSC) members carried out the collection and clustering of RAFL CDNAs (RAFL CDNA: 'KIKEN Arabidopsis Full-Length cDNA'): Seki,M., Narusaka,M., Ishida,J., Satou,M., Kamiya,A., Sakurai,T., Carninci,P., Kawai,J., Hayashizaki,Y. and Shinozaki,K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Shinn, P. (SSP/Salk) and Seki, M. (RIKEN GSC) contributed equally to this work. Shinozaki, K. (RIKEN GSC) and Ecker, J.R. (SSP/Salk) contributed equally to this work as PIs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequencing and annotation of the RAFL cDNAs: Shinn, P., Chen, H., Cheu, K., Kim, C.J., Meyers, M.C., Banh, J. Bowser, L., Chang, E., Cheuk, R., Kim, C.J., Meyers, M.C., Banh, J. Bowser, L., Chang, E., Dale, J.M., Goldsmith, A.D., Jones, T., Karlin-Neumann, G., Lam, B., Lee, J.M., Lin, J., Miranda, M., Nguyen, M., Onodera, C.S., Palm, C.J., Quach, H.L., Southwick, A., Tang, C.C., Toriumi, M., Mu, H.C., Yamadda, K., Yamamura, Y., Yu, G., Yu, S., Davis, R.W., Theologis, A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The Salk, Stanford, PGEC (SSP) Consortium members carried out the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  and Ecker, J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
ACAAGCACCGGAACCACCTCTTCACCACCCAAAAACCCCACCGAGCAATCTCACGATGGTCT 300
                                                                                                              GGGTCCTCCCACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACA
                                                                                                                                                                        CCGTCTTCTCCGAACAAACTTTATCCGGCGATCTTACCGTTTACCCGCTTTTAGCCCGGT
                                                                                                                                                                                                                CCGTCTTCTCCGAACAACTTTATCCGGCGATCTTACCGTTTTACCCGCTTTTAGCCCGGT
                                                                                                                                                                                                                                                                                      GAGAAATTATTTTTTTTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTTATGGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /product="At3g30775/MIF6.16"
/protein_id="AA167111.1"
/db_xref="G1:18377849"
/translation="MATRILERNFIRRSYRLPAFSPVGPFTVTASTAVVPEILSFGQQ
APEPPLHHPKPTEQSHDGLDLSDQARLFSSIPTSDLLRSTAVLHAAAIGPMVDLGTWV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="proline oxidase, mitochondrial precursor (osmotic
stress-induced proline dehydrogenase)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KYMPFGPVATAIPYLLRRAYENRGMMATGAHDRQLMRMELKRRLIAGIA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EKENVPMGFKLVRGAYMSSEASLADSLGCKSFVHDTIQDTHSCYNDCMTFLMEKASNG
SGFGVALATHNADSGRLASRKASDLGIDKQNGKIEFAQLYGMSDALSFGLKRAGFNVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MSSKLMDASVTRGMVLGLVKSTFYDHFCAGEDADAAAERVRSVYEATGLKGMLVYGVE
HADDAVSCDDNMQQFIRTIEBAKSLFTSHFSSVVVKITAICFIELKERVSDLLKEVSDL
SPNFXLSWLLKSFPVFSESSFLYHTMSEPEFLTAEEERELEAAHGRIQEICEKCOESN
VPLLIDAEDTILQPAIDYMAYSSAIMFNADKDRFIVYNTIQAYLRDAGERLHLAVQNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1623. .1841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   note="compared to genome"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="RAFL05-17-E01(R21573)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /mol_type="mRNA"
/db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              replace="t"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ecotype="Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               chromosome="3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .1622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 1825.2;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ω
``
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1841;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                       240
                                                                                                                                                                           190
                                                                                                                                                                                                                                                                                         130
                                                                                                                                                                                                                                                                                                                                                                                                          70
                                                             250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
```

Š

В

S

2 2 2 2

문

성 음 성

S

밁

Ś

8 8 8 8 8 8 8 8

유 성

8 8 8 8 8 8 8

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 3
AF428306
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            皮
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 1854)
Cheuk, R., Chen, H., Kim, C.J., Koesema, E., Meyers, M.C., Banh, J., Eowser, L., Carninci, P., Dale, J.M., Goldsmith, A.D., Hayashizaki, Y., Ishida, J., Jiang, P.X., Jones, T., Kamiya, A., Karlin-Neumann, G., Kawai, J., Lam, B., Lee, J.M., Lin, J., Liu, S.X., Miranda, M., Narusaka, M., Nguyen, M., Onodera, C.S., Palm, C.J., Pham, P.K., Quach, H.L., Sakurai, T., Satou, M., Seki, M., Southwick, A., Tang, C.C., Toriumi, M., Yamada, K., Yamamura, Y., Yu, G., Yu, S., Shinozaki, K., Arabidopsis cDNA clones
Unpublished
Jinous and Bcker, J.R.
                                                                                                                                                                                                                                                                          2 (bases 1 to 1854)
Cheuk, R., Chen, H., Kim, C.J., Koesema, E., Meyers, M.C., Banh, J.,
Cheuk, R., Chen, H., Kim, C.J., Koesema, E., Meyers, M.C., Banh, J.,
Bowser, L., Carninci, P., Dale, J.M., Goldsmith, A.D., Hayashizaki, Y.,
Ishida, J., Jiang, P.X., Jones, T., Kamiya, A., Karlin-Neumann, G.,
Ishida, J., Jiang, P.X., Jones, T., Kamiya, A., Karlin-Neumann, G.,
Kawai, J., Lam, B., Lee, J.M., Lin, J., Liu, S.X., Miranda, M.,
Narusaka, M., Nguyen, M., Onodera, C.S., Palm, C.J., Pham, P.K.,
Quach, H.L., Sakurai, T., Satou, M., Seki, M., Southwick, A., Tang, C.C.,
Toriumi, M., Yamada, K., Yamamura, Y., Yu, G., Yu, S., Shinozaki, K.,
Davis P. W., Tang, C., S., Palm, C., Yu, S., Shinozaki, K.,
Davis P. W., Tang, C., S., Palm, C., Yu, S., Shinozaki, K.,
Davis P. W., Shinozaki, K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Arabīdopsis thaliana (thale cress)
Arabīdopsis thaliana
Arabīdopsis thaliana
Eukaryotops; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
RIKEN Genomic Sciences Center (GSC) members carried out the collection and clustering of RAFL CDNAs (RAFL CDNA: 'KIKEN Arabidopsis Full-length cDNA'): Seki,M., Narusaka,M., Ishida,J., Satou,M., Kamiya,A., Sakurai,T., Carninci,P., Kawai,J.,
                                                                                                                                         Submitted (03-OCT-2001) Salk Institute Genomic Analysis Laboratory (SIGNAL), Plant Biology Laboratory, The Salk Institute for Biological Studies, 10010 N. Torrey Pines Road, La Jolla, CA 92037,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1854 bp mRNA li
Arabidopsis thaliana At3930775/MIF6.16 mRNA,
AF428306
AF428306.1 GI:16226334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FLI_CDNA.
                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                              Davis,R.W., Theologis,A. and Ecker,J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTCACCTTATCAATAAAAATGCTTTTTAC 1830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGGGAAGATTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTCACCTTATCAATAAAAATGCTTTTTAC 1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTAAATATTTTTCATGAGGGACTATGTTTTTTACTATCAATATATCATTCACAAATGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTAAATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTAT 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAATTGAAAAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTG 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATGGAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAAATTGAAAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATGGAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTA 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PLN 18-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1810
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1510
```

FEATURES

gg

```
Matches 1822;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                         365 GCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGC 424
                                                                                                                      305
                                                                                                                                                                      256
                                                                                                                                                                                                                                                                196
                                                                                                                                                                                                                                                                                                             185
                                                                                                                                                                                                                                                                                                                                                             136
                                                                                                                                                                                                                   245
                                                                                                                                                                                                                                                                                                                                                                                                     125 CTTCTCCGAACAAACTTTATCCGGCGATCTTACCGTTTTACCCGCTTTTAGCCCGGTGGGT 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                        76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The Salk, Stanford, PGEC (SSP) Consortium members carried out the sequencing and annotation of the RAFL CONAs: Cheuk, R., Chen, H., Kim, C.J., Koesema, E., Meyers, M.C., Shinn, P., Banh, J. Bowser, L., Dale, J.M., Goldsmith, A.D., Jiang, P.X., Jones, T., Karlin-Neumann, G., Lam, B., Lee, J.M., Lin, J., Liu, S.X., Miranda, M., Mguyen, M., Onodera, C.S., Palm, C. J., Pham, P.K., Quach, H.L., Southwick, A., Tang, C.C., Toriumi, M., Yamada, K., Yamamurra, Y., Yu, G., Yu, S., Davis, R.W., Theologis, A., and Ecker, J.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     contributed equally to this work as PIs. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cheuk,R. (SSP/Salk) and Seki,M. (RIKEN GSC) contributed equally to this work. Shinozaki,K. (RIKEN GSC) and Ecker,J.R. (SSP/Salk)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hayashizaki,Y. and Shinozaki,K.
                                                                                                       CTCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACC
                                                                                                                                                                                                         GCACCGGAACCACCTCTCACCACCCAAAACCCACCGAGCAATCTCACGATGGTCTCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATTATTTTTTTTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGT 135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AATTATTTTTTTTTGTTTTCGTTTTCAAAAAACAAAATCTTTGAATTTTATGGCAACCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACC
                                                                                                                                                                   GCACCGGAACCACCTCTTCACCACCCAAAAACCCCACCGAGCAATCTCACGATGGTCTCGAT
                                                                                                                                                                                                                                                              CCTCCCACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAA
                                                                                                                                                                                                                                                                                                             CCTCCCACCGTGACTGCTTCCACCGCCGTCGTCGTCCGGAGATTCTCTCCTTTGGACAACAA 244
                                                                                                                                                                                                                                                                                                                                                        CTTCTCCGAACAACTTTATCCGGCGATCTTACCGTTTACCCGCTTTTAGCCCGGTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="At3330775/MIF6.16"
/product="At13138.1"
/product=in_id="AAL16138.1"
/protein_id="AAL16138.1"
/db_xref="Gi:16226335"
/translation="MATTLLRINFIRRSYRLPAFSPVGPPTVTASTAVVPEILSFGQQ
APEPPLHHPKTTEQSHOGLDLSDQARLFSSIPTSDLLRSTAVLHAAAIGPMVDLGTWV
MSSKLMDASVTRGMVLGLVKSITYDHFCAGEDADAABERVRSVTLKBTGLKGMLVYGVE
MSSKLMDASVTRGMVLGLVKSITYDHFCAGEDADAABERVRSVLKBTGLKGDLLRWSVK
HADDAVSCDDMQQFTRTIEAAKSLPTSHFSSVTVKLTAICFTSLLKRVGLLRWSCK
SPNFKLSWKLKSFPVFSBSSPLYHTNSBPEPLTABEERBLEAAHGRIQBICRKCQESN
VPLLIDAEDTILQPALDYMASSSAIMFNADKORPIVYNTIQAYLRDAGERLHLAVQNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KYMPFGPVATAIPYLLRRAYENRGMMATGAHDRQLMRMELKRRLIAGIA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EKENVEMGFKLVRGAYMSSEASLADSLGCKSFVHDTIQDTHSCYNDCMTFLMEKASNG
SGFGVVLATHNADSGRLASRKASDLGIDKQNGRIEFAQLYGMSDALSFGLKRAGFNVS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       stress-induced proline dehydrogenase)"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1. .1854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note="compared to genome"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note="proline oxidase,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Arabidopsis thaliana"
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 replace="a"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 db_xref="taxon:3702"
chromosome="3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ecotype="Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          clone="RAFL09-69-M18 (R14839)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1818.4;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mitochondrial precursor (osmotic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1854;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        o
~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                      375
                                                                                                                                                                   315
                                                                                                                                                                                                                                                              255
                                                                                                                                                                                                                                                                                                                                                        195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                          B
                                                                                                                                       Ś
                                                                                                                                                                                       밁
                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                            멍
                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                    1325
                                                                                                                                                                                                                                                                                                                                                                               1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1036
  1456 GCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTAT 1515
                                                                                                                                                                                                                                                                                                                                    1265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              976
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              965
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        856
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    376 GCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGC 435
                                        GCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTAT
                                                                                               AGGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGA
                                                                                                                                       AAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGA
                                                                                                                                                                                       GATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGG
                                                                                                                                                                                                                                    GATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGG
                                                                                                                                                                                                                                                                                  CTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCT
                                                                                                                                                                                                                                                                                                                               CTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCT
                                                                                                                                                                                                                                                                                                                                                                                 TCGCCAGTCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTC
                                                                                                                                                                                                                                                                                                                                                                                                               TCGCCAGTCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGGTGAGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAG 1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAAGAGAATGTTCCTATGGGGTTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGAGCGCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACACAATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACACAATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAAT 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGTATCTTGTGATGATAACATGCAACAATTCATTCGAACCATTGAAGCTGCCAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCTGTATCTTGTGATGATAACATGCAACAATTCATTCGAACCATTGAAGCTGCCAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACG 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGGTGAGAGGGGCTTACATGTCTAGCGAAGCTAGCTTGGCGGATTCCCTGGGTTGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TCAGAACCGGAACCGTTAACCGCGGAAGAAGAAGGGAGCTCGAAGCAGCTCATGGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCAGAACCGGAACCGTTAACCGCGGAAGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCATGGAAGCTCAAATCGTTTTCCGGTTTTCTCCGAATCGAGTCCTCTCTACCACACAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTCTGAAACGAGTGAGCGATCTGCTGCGGGGAATACAAAAGTCCGAACTTCAAACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTACCAACATCTCACTTTAGCTCAGTGGTGGTGAAGATAACTGCCATTTGTCCAATTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGAC 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCCTTGTGAAAAGTACG 495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCATGGAAGCTCAAATCGTTTCCGGTTTTCTCCGAATCGAGTCCTCTCTACCACACAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGC 544
                                                                                             1455
                                                                                                                                                                                                                                    1384
                                                                                                                                                                                                                                                                                                                                                                                                                            1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                615
                                                                                                                                                                                                                                                                                    1335
                                                                                                                                                                                                                                                                                                                                                                               1275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  664
                                                                                                                                            1444
                                                                                                                                                                                                                                                                                                                                 1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        735
```

밁 δ 밁 Ş B Ś 멂 Ś 밁 S 닭 \$

```
PUBMED
REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15.05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Verbruggen, N., Hua, X.J., May, M. and Van Montagu, M. Environmental and developmental signals modulate proline homeostasis: evidence for a negative transcriptional regresco. Natl. Acad. Sci. U.S.A. 93 (16), 8787-8791 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               pox gene; proline oxidase.
Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gent University, K. L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hua, X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   96323303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 X97075.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TPOX 1855 bp n.thaliana mRNA for proline oxidase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCCACCGGAGCTCATGACCGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTCTCCGACGCGCTTATGAGAACCGGGGGAATGATGACCGCACCGGAGCTCATGACCGTCAA 1564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCTTATCAATAAAATGCTTTTTACTT 1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCITATCAATAAAATGCTTTTACTT 1832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTATATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTGAAAACAAAAATTATAATATAAGAAATGGAGTAAGGAACATTTCCTGTGGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTGAAAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTGGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGCCATTAAATGAAATTGGGAAATGTAGATGAATAATTTCTTCTATGTAGTTTAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 1855)
/product="proline oxidase"
/protein_id="CAA65783.1"
/db_xref="GC1:1531760"
/db_xref="GC1:1531760"
/db_xref="GC1:1531760"
/db_xref="GC1:1531760"
/db_xref="GC1:1531760"
/db_xref="GC1:1531760"
/db_xref="GC1:1531760"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xref="SMISS-PROT:192983"
/db_xr
                                                                                                                                                                                                                                                                 /gene="pox"
122. .1621
                                                                                                                                                                                                                                                                                                                                      /tissue_type="root"
/clone_lib="lambda_Zap"
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ocation/Qualifiers
                                                                                                                                                                                                               codon_start=1
                                                                                                                                                                                                                                     'gene="pox"
                                                                                                                                                                                                                                                                                                                                                                                                                       'chromosome="3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (mol_type="mRNA"
/cultivar="columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (22-MAR-1996) X. Hua, Lab of Genetic, Faculty of Science, prsity, K. L. Ledeganckstraat, 35, B-9000, Gent, Belgium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GI:1531759
                                                                                                                                                                                                                                                                                                                                                                                                                                                db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PLN 10-SEP-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               regulator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1755
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1575
                              밁
                                                                        Ϋ́S
                                                                                                                                  밁
                                                                                                                                                                                 S
                                                                                                                                                                                                                                        片
                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sig_peptide
                              794
```

```
Query Match 99.2
Best Local Similarity 99.6
Matches 1822; Conservative
               785
                                                       734
                                                                                                725
                                                                                                                                          674
                                                                                                                                                                                665
                                                                                                                                                                                                                           614
                                                                                                                                                                                                                                                                 509
                                                                                                                                                                                                                                                                                                            554
                                                                                                                                                                                                                                                                                                                                                    545
                                                                                                                                                                                                                                                                                                                                                                                            494
                                                                                                                                                                                                                                                                                                                                                                                                                                    485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  374
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ຫ
TCATGGAAGCTCAAAICGTTTCCGGTTTTCTCCGAATCGAGTCCTCTCTACCACACAAAC 844
                                                                                                                                                                                                                                                          GCTGTATCTTGTGATGATAACATGCAACAATTCATTCGAACCATTGAAGCTGCCAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCACCGGAACCACCTCTTCACCACCACAAAACCCACCGAGCAATCTCACGATGGTCTCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATTATTTTTTTTTTTCGTTTTCAAAAACAAATCTTTGAATTTTATGGCAACCCGT 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATTATTTTTTTTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTC
                                                                                                                                          TTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGT
                                                                                                                                                                                TTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGT
                                                                                                                                                                                                                                                                                                         GTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGAC
                                                                                                                                                                                                                                                                                                                                                                                            TTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCTCCGATCAAGCCCGTCTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCTCCGATCAAGCCCGTCTTTTCTCCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCACCGGAACCACCTCTTCACCACCCAAAAACCCCACCGAGCAATCTCACGATGGTCTCGAT 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCTCCCACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAA 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTCTCCGAACAAACTTTATCCGGCGATCTTACCGGTTTACCCGCTTTTAGCCCGGTGGGT 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTCTCCGAACAAACTTTATCCGGCGATCTTACCGTTTTACCCGCTTTTTAGCCCGGTGGGT 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTC
                                                                                                                                                                                                                                                                                                                                                  GITTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTTAGGGCCTTGTGAAAAGTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCGTGTTGCATGCGCCGCCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HADDAVSCDDNMQQFIRTIEAAKSLETSHFSSVVVKITAICPISLLKRVSDLLRWEYK SPNFKLSWKLKSFPVESESSPLYHTMSEDEDLTAEEBBELEAAHGRIQBICKCQESN VPLLIDAEDTIQPALDYMAYSSAHIPMADKSPETIYNTIQAYLDAGERICHKAVQNA EKENVPMGFKLVRGAYMSSEASLADSVGCKSBVHDTIQDTHSCYNDCMTFLHMEKASQNA GKGFGVVLATHNADSGRLASRKASDLGIDKQNGKIEFAQLYGMSDALSFGLKRAGFNVS KYMPFGPVATAIPYLLRRAYENRGMMATGAHDRQLMRMELKRRLIAGIA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /gene="pox"
/note="mitochondrial"
171. .1618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /gene="pox"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 1817.8;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     œ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1855;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73
                                                                                                    784
                                                                                                                                               733
                                                                                                                                                                                                                             673
                                                                                                                                                                                                                                                                     664
                                                                                                                                                                                                                                                                                                              613
                                                                                                                                                                                                                                                                                                                                                      604
                                                                                                                                                                                                                                                                                                                                                                                                 553
                                                                                                                                                                                                                                                                                                                                                                                                                                         544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        253
                                                          793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
```

TCATGGAAGCTCAAATCGTTTTCCGGTTTTCTCCGAATCGAGTCCTCTCTACCACAAAC

```
RESULT 5
ATU59508
                                                                                                                                                    B
                                                                                                                                                                              Ś
                                                                                                                                                                                                                B
                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                            1814
                                                                                                                                                                                   1745
                                                                                                                                                                                                                  1694
                                                                                                                                                                                                                                                                                                                                       1574
                                                                                                                                                                                                                                                                                                                                                                     1565
                                                                                                                                                                                                                                                                                                                                                                                                    1514
                                                                                                                                                                                                                                                                                                                                                                                                                                   1505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1394
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1274
                                                                                                                                                                                                                                               1685
                                                                                                                                                                                                                                                                                                          1625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1214
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1094
                                                                                                                                                                                                                                                                              1634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1145 TIGGTGAGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGATTCCCTGGGTTGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1085 GAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAG 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1034 GCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           974 GACACAATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 845 TCAGAACCGGAACCGTTAACCGCGGAAGAAGAAGGGAAGCTCGAAGCAGCTCATGGAAGG
Arabidopsis thaliana osmotic stress-induced proline dehydrogenase
                 ATU59508
                                                                                           ACCTTATCAATAAAATGCTTTTTACTTT 1842
                                                                                                                                                    AATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTATATTC
                                                                                                                                                                                                                                                                                                GAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAA 1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGGGTTCAATGTTAGCAAGTACATGCCGTTTTGGACCCGTCGCAACCGCTATACCGTAT 1504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGA 1444
                                                                                                              ACCTTATCAATAAAAATGCTTTTTACTTT 1833
                                                                                                                                                                        AATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTATATTC 1804
                                                                                                                                                                                                                                    ATTGAAAACAAAAAATTATAATATAAGAAATGGAGTAAGAACATTTCCTGTGGCTA 1744
                                                                                                                                                                                                                                                                           GAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAA
                                                                                                                                                                                                                                                                                                                                      CTTCTCCGACGCGTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAA 1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGG 1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGG 1384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ĊTĠATĠĠAĠAAAĠĊATĊAAAĊĠĠTTĊTĠĠTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACACATAACGCT 1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAG
                                                                                                                                                                                                               ATTGAAAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTGGCTA
                                                                                                                                                                                                                                                                                                                                                                   CTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAA 1564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGCCAGTCCACGACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TCGCCAGTCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTC 1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTGGTGAGAGGGGCTTACATGTCTAGCGAAGCTAGCTTGGCGGATTCCGTGGGTTGCAAG 1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGT 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GACACAATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAAT 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCAGAACCGGAACCGTTAACCGCGGAAGAAGAAGGGAGCTCGAAGCAGCTCATGGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTAT 1513
             1745 bp
                mRNA
              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ITCTCGCAACACATAACGCT
              PLN 14-JAN-1997
                                                                                                                                                    1813
                                                                                                                                                                                                                                                                           1693
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
JOURNAL
                                        Ś
                                                                         밁
                                                                                                 Ş
                                                                                                                                    밁
                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
KEYWORDS
              밁
                                                                                                                                                               Ś
                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                    B
                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                    241
                                                                                                                                                                   269
                                                                                                                                                                                                  181
                                                                                                                                                                                                                             209
                                                                                                                                                                                                                                                                                          149
                                                                                                                                                                                                                                                                                                                       61
                                       GICCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTG
                                                                                           TCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGGCGATA
                                                                                                                                    CCAAAACCCACCGAGCAATCTCACGATGGTCTCGATCTCTCCGATCAAGCCCGTCTTTTC
                                                                       TCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATA
```

```
Matches 1738;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                          Peng, 2. and Verma, D.P.S.

Direct Submission
Submitted (30-MAY-1996) Plant Biotechnology,
1060 Carmack Road, Columbus, OH 43210, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (pro1) mRNA, complete cds. U59508 U59508.1 GI:1778014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
1 (bases 1 to 1745)
CCAAAACCCCACCGAGCAATCTCACGATGGTCTCGATCTCTCCGATCAAGCCCGTCTTTTC
                                                       GCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCAACGGAACCACCTCTTCAACAC
                                                                                                         GCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACCGGAACCACCTCTTCACCAC
                                                                                                                                                           CGATCTTACCGTTTACCCGCTTTTAGCCCCGGTGGGTCCTCCCACCGTGACTGTTTCCACC
                                                                                                                                                                                               CGATCTTACCCGTTTACCCGCTTTTAGCCCGGTGGGTCCTCCCACCGTGACTGCTTCCACC
                                                                                                                                                                                                                                                                  TCAAAAACAAATCTTTGAATTTTATGGCAACCCGTCTTCTCCGGAACAACTTTATCCGG
                                                                                                                                                                                                                                                                                                   TCAAAAACTCTTTGAATTTTATGGCAACCCGTCTTCTCCGGAACAAACTTTATCCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="osmotic stress-induced proline dehydrogenase"
/protein_id="AAB40615.1"
/db_xxef="gi-1778015"
/db_xxef="gi-1778015"
/translation="markllrtnfirrsyrlpafspvgpptvTvsTavvpeilsfqqq
ATEPPLOHPKPTEQSHOGLDLSDQARLPSSITTSDLLRSTAVLHAAA1GPMVDLGTWV
MSSKLMDASVTRGMVLGLVKSTFYDHFCAGEDADAAAERVRSVYEATGLKGMLVYGVE
HADDAVGCDDNNQQFIRTIEAAKSLFTSHFSSVVVKITALGFISLKKVSDLLKWBYK
SPNFKLSWKLKSFPVFSESSPLYHTNSEPEPLTAEEERBLEAAHGRIQEICRKCQESN
VPLLIDAEDTILQPALDYMAYSSAIMFWADKDRPIVATTQAYLADAGERLHLAVQNA
EKENVPMGFKLVRGAYNSSEASLADSJGCKSPVHDTIQDTHSCYNDCMTFLWEKASNG
SGFGVVLATHNADSGRLASRKKSDLGIDKQNGKIEFAQLYGMSDALSFGLKRAGFNVS
KYMPFGPVATAIPYLLARAYENRGMMFTGAHDRQLMRMELKRRLIAGIA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="Prol"
85: .1584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /gene="Pro1"
/EC_number="1.5.99.8"
/note="proline oxidase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="mRNA"
/strain="ecotype Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1722.8;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ohio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 State University,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                 148
     328
                                                                                                         268
                                                                                                                                                                                                                                                                  120
                                                       240
                                                                                                                                                           180
                                                                                                                                                                                                             208
                                                                                                                                                                                                                                                                                                                                                                      60
```

360

g

성 유

Ś

g

Ś

B

```
1021
                                                                                              1469
                                                                                                                                             1381
                                                                                                                                                                                                                                            1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1109
                                                                                                                                                                                                                                                                                                                                                                                         1289
                                                                                                                                                                                                                                                                                                                                                                                                                                           1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             608
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAAGAGTCCAATGTACCATTGTTGATTGATGCGGAAGACACAATCCTCCAACCCGCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAAGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGATGCCGACGCGCTGAGCGCGTGAGAGCGTTTATGAAGCTACTGGTCTTAAA
CGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGG 1588
                                            ATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAAC
                                                                                           ATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAAC 1528
                                                                                                                                                                             GGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTAC 1468
                                                                                                                                                                                                                                            AAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGCGAAGCTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACAATTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACAATTCAG 1228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AATGCTGAGAAAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGCTTACATGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACAACACGATTCAGGCGTACTTGAGAGAGCGCCGGTGAGAGACTGCATTTGGCAGTACAA 1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAAGAGTCCAATGTACCATTGTTGATTGATGCGGAAGACACAATCCTCCAACCCGCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAAGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTTTTCTCCGAATCGAGTCCTCTCTACCACACAAACTCAGAACCGGAACCGTTAACCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTTTCTCCGAATCGAGTCCTCTCTACCACACACACAGAACCGGAACCGGTTAACCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTGGTTGTGAAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAACAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAACAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTATGACCATTTTTTGCGCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTATGACCATTTTTGCGCCGGT
                                                                                                                                                                                                                                                                                        AAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATAT
                                                                                                                                                                                                                                                                                                                                          TCTGGTTTCGGTGTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                       TCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCG
                                                                                                                                             1440
                                                                                                                                                                                                                                                                                           1408
                                                                                                                                                                                                                                                                                                                                          1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                               1500
                                                                                                                                                                                                                                            1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          600
                                                                                                                                                                                                                                                                                                                                                                                                                                              1260
```

Ś

뭥

5 B

밁

Ś

8 B 8

밁

중 유

D,

5 B

Ś

8 8 8

```
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
KEYWORDS
 밁
                            S
                                                                    밁
                                                                                                       8
                                                                                                                                           밁
                                                                                                                                                                          S
                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                     문
                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              끊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   멇
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AX651553
                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 1494;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1740
 301
                                  413
                                                                      241
                                                                                                         353
                                                                                                                                           181
                                                                                                                                                                            293
                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                         173
                                                                                                                                                                                                                                                                                                                                                                                              113 ATGGCAACCCGTCTTCTCCGAACAAACTTTATCCGGCGATCTTACCCGTTTACCCGCTTTT 172
                                                                                                                                                                                                                                                    233
                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1500 bp I
Sequence 362 from Patent W003000898.
AX651553
AX651553.1 GI:29154371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chang,H.S., Chen,W., Cooper,B., Glazebrook,J., Goff,S.A., Hou,Y.M., Katagiri,F., Quan,S., Tao,Y., Whitham,S., Xie,Z., Zhu,T. and Zou,G. Plant genes involved in defense against pathogens Patent: wO 03000898-A 362 03-VAN-2003; Syngenta Participations AG (CH)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
Arabidopsis thaliana
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Eukaryota; Viridiplantae; Streptophyta; core eudicots;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
TGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTT
                      TGGGTCATGAGCTCTAAACTTAIGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTT 472
                                                                                                                                                                                                                                                                                                                   AGCCCGGTGGGTCCTCCCACCGTGACTGCTTCCACCGCCGTCGTCCCCGGAGATTCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGAAATGGAGTAGGTAAGAACATTTCCTGTGGCTAAATATTTTTCATGAGGGACTATGT 1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGATTAATCGCCGGGATTGCGTAAAGAGAGAGTATGGA-CCATTAAATGAAATTGGGAAA 1619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGATTAATCGCCGGGATTGCGTAAAGAGAGAGAGTATGGAGCCATTAAATGAAATTGGGAAA 1648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCCGTTCCACCGCGTGTTGCATGCGGCGATAGGTCCTATGGTCGACCTAGGGACG
                                                                                                                                                                            GATGGTCTCGATCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTC 352
                                                                                                                                                                                                                                                                                         AGCCCGGTGGGTCCTCCCACCGTGACTGTTTCCACCGCCGTCGTCCCGGAGATTCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTTAC 1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTAC 1774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGAAATGGAGTAAGAACATTTCCTGTGGCTAAATATTTTTCATGAGGGACTATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAAATTGAAAACAAAAAATTATAATAT
                                                                                             CTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACG
                                                                                                                                           GATGGTCTCGATCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTC
                                                                                                                                                                                                                  TTTGGACAACAAGCAACGAACCACCTCTTCAACACCCAAAAACCCACCGAGCAATCTCAC
                                                                                                                                                                                                                                                  TTTGGACAACAAGCACCGGAACCACCTCTTCACCACCCAAAAACCCACCGAGCAATCTCAC
                                                                                                                                                                                                                                                                                                                                                             ATGGCAACCCGTCTTCTCCGAACAACTTTATCCGGCGATCTTACCGTTTTACCCGCTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Arabidoppis thaliana"
/mol_type="unassigned DNA"
/db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
1. .1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                   81.3%;
99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 1490.4;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                6.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1500;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PAT 22-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                        300
                                                                                                            412
                                                                                                                                             240
                                                                                                                                                                                                                                                      292
                                                                                                                                                                                                                                                                                         120
                                                                                                                                                                                                                                                                                                                           232
                                                                                                                                                                                                                                                                                                                                                             60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1679
                                                                                                                                                                                                                  180
```

g Ś

linear

PAT

27-SEP-2002

```
1433
                                                                                                                                                                                                                                                                                                                                  1313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1073 AGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAGAATGTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1013
                                                                                                                                                                                                                                                                                        1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              901 ATCATGTTCAATGCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGAAAAGTACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAG
CATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGATTAATCGCCGGGATTGCGTAA 1612
                                                                    GCTATACCGTATCTTCTCCCACGCGCTTATGAGAACCGGGGAATGATGATGGCCACCGGAGCT 1552
                                                                                                                                                 GGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACC
                                                                                                                                                                                                                                                                                                              ACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGAT
                                                                                                                                                                                                                                                                                                                                                                            TGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCA
                                                                                                                                                                                                                                                                                                                                                                                                      TGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATGGGGTTCAAGTTGGTGAGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATCATGTTCAATGCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTGATGCGGAAGACACTCCCAACCCGCGATCGATTACATGGCTTATTCATCGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTGATGCGGAAGACACAATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGCCAAGAGTCCAATGTACCATTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGCCAAGAGTCCAATGTACCATTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACCACAAACTCAGAACCGGAACCGTTAACCGCGGAAGAAGAAAGGGAAGCTCGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TACCACACAAACTCAGAACCGGAACCGTTAACCGCGGAAGAAGAAAGGGAGCTCGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AACTTCAAACTCTCATGGAAGCTCAAATCGTTTTCCGGTTTTCTCCGAATCGAGTCCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AACTTCAAACTCTCATGGAAGCTCAAATCGTTTTCCGGTTTTTCTCCGAATCGAGTCCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTGAAAAGTACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAG
                                       GCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGCCCACCGGAGCT
                                                                                                                       GGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACC
                                                                                                                                                                                                        AAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTC
                                                                                                                                                                                                                                              AAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTC
                                                                                                                                                                                                                                                                                        ACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                    1312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1132
                                                                                                                           1380
                                                                                                                                                                   1492
                                                                                                                                                                                                        1320
                                                                                                                                                                                                                                                                                                                                                                            1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              532
                                                                                                                                                                                                                                                  1432
                                                                                                                                                                                                                                                                                                                                  1372
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        540
                                            1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ٠.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 7
AX506716
LOCUS
                                                                               문
                                                                                                                     Ś
                                                                                                                                                                   밁
                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
    밁
                                 Ś
                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                               5
                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 1459;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1441 CATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGATTAATCGCCGGGATTGCGTAA 1500
    541
                                            692
                                                                                                                             632
                                                                                                                                                                   421
                                                                                                                                                                                                             572
                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                            512
                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                              452
                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                             392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                152 TCTTACCGTTTACCCGCTTTTAGCCCGGTGGGTCCTCCCACCGTGACTGCTTCCACCGCC
                                                                                   481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 1411 from Patent AX506716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Stress-regulated genes of plants, transgenic plants containing same, and methods of use Patent: WO 0216655-A 1411 28-FEB-2002; The Scripps Research Institute (US); Syngenta Participations I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Harper, J.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana (thale cress)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AX506716.1 GI:23387953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AX506716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           h 79.5%; Score 1457.8; Similarity 99.9%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     \Xi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACCGGAACCACCTCTTCACCACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAACCCACCGAGCAATCTCACGATGGTCTCGATCTCTCCGATCAAGCCCGGTCTTTTCTCCC
                                                                                                                                                                                                                                                                                                                                      CGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTATGACCATTTTTGCGCCCGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAACCCACCGAGCAATCTCACGATGGTCTCGATCTCCGATCAAGCCCGTCTTTTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTCGTCCCGGAGATTCTCTCTTTGGACAACAACACCGGAACCACCTCTTCACCACCCA
                                                                                      CAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTG
                                                                                                                  CAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGT
  GTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTG
                            GTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTG 753
                                                                                                                                                                   ATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACATGCAA
                                                                                                                                                                                                             ATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACATGCAA
                                                                                                                                                                                                                                                     GATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTATGAAGCTACTGGTCT
                                                                                                                                                                                                                                                                                          GATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAAGGG
                                                                                                                                                                                                                                                                                                                                                            CGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTATGACCATTTTTTGCGCCGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                      CCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        remaceennaceechnadeeceerigeereeneeckeerigaeneareenee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Arabidopsis thaliana"
/mol_type="unassigned DNA"
/db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kreps, J., Wang, X. and Zhu, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1461 bp I
nt WO0216655.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (US) ; Syngenta Participations AG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 6;
```

2;

Indels

0

Gaps

0

Length 1461;

Ş 밁 Ś

뭕

691

480

540

600

631

420

571 360 511 300 451 391

180

240

331 120 271 **σ** 211

Ś

S 밁 Ś g 8 8 밁

밁

밁

8

S

밁 8 밁 Ş

밁 δ Ď, Ś 밁 ફ 밁 Ś 밁 5 맑 Ś 밁

맑

```
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      맒
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                       AB028614/c
                                                                                                          KEYWORDS
                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                             RESULT 8
                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                          1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1112
                                                                                                                                                                                                                                                                                                                                                                     1592 TTAATCGCCGGGATTGCGTAA 1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1472 CCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGG 1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1232 ACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCT 1291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1052 AACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAAT 1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              872 GAAGAAAGGGAGCTCGAAGCACCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721 GAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGCCAA
                                                                                                          82347 bp
Arabidopsis thaliana genomic DNA,
AB028614 BA000014
AB028614.1 GI:5041967
Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
Eukaryota; Viridikplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACAATTCAGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAAGCTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACAATTCAGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGCTTACATGTCTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGTCTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCTCCGAATCGAGTCCTCTACCACACAAACTCAGAACCGGAACCGTTAACCGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTCTCCGAATCGAGTCCTCTCTACCACACAAACTCAGAACCGGAACCGTTAACCGCGGAA 871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCGGTT 811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTTTCGGTGTCGCCAACACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAA 1351
                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGAATGGAACTTAAGAGAGAAGA 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTAATCGCCGGGATTGCGTAA 1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGA 1591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA linear PLN 27-DEC chromosome 3, P1 clone:MIF6.
                                                                                                                                                                                                               PLN 27-DEC-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SdC
                                                                                                                                     Sgo
                                                                                                                                                                                                                                                                                           gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Address for correspondence: kaos@kazusa.or.jp
Address for correspondence: kaos@kazusa.or.jp
For the latest information on annotation of this clone, please see
http://www.kazusa.or.jp/kaos/cgi-bin/agd_graph.cgi?c=MIF6
Genes with similarity to proteins in the databases are described in
'product' or 'note' qualifiers. Genes that have no significant
protein similarity are described as 'unknown protein'.
The software programs used to predict genes include: Grail
(Informatics Group, Oak Ridge National Laboratory,
http://compbio.ornl.gov/Grail-1.3/),
MerGene2 (S.M. Hebsgaard, et al., CBS, Technical University of
Denmark, http://www.cbs.dtu.dk/services/NetGene2/) and
SplicePredictor (Volker Brendel, Stanford University,
http://gremlinl.zool.iastate.edu/gi-bin/sp.cgi).
Genes encoding tRNAs are predicted by tRNAscan-S3
(Sean Eddy, Washington University School of Medicine, St. Louis,
http://genome.wustl.edu/eddy/tRNAscan-S3/).
This sequence may not be the entire insert of this clone. It may be
shorter because we remove overlaps between neighboring submissions.
The 5' clone is TAA2 and the 3' clone is F1112.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (09-JUN-1999) Yasukazu Nakamura, Kazusa DNA Research Institute, Department of Plant Gene Research; 1532-3, Yana,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sato,S., Nakamura,Y., Kaneko,T., Katoh,T., Asamizu,E. and Tabata,S. Structural analysis of Arabidopsis thaliana chromosome 3. I. Sequence features of the regions of 4,504,864 bp covered by sixty Pl and TAC clones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA Res. 7 (2), 131-135 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10819329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 82347)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (sites
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nakamura, Y., Kaneko, T., Kato, T., Asamizu, E. and Tabata, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   complement(join(481. .843,920. .1043,1127. .1285,1374. .1490,
1563. .1831,1897. .1929))
/note="gb|AAD25622.1
                                                                                                                                                                                                                                                                                                                                          GDSGLKTPTIASSSAVTKLETVTINEIHQFLHNENHRKLASPALLQLWTYKPQHGWY
YISCSISNNKLQQADYSMYCKKCKEYNNVGLISYR FEMTLEDKAGDVGTFVVLNGERF
KIAGKNARDYLNECIEAAGKONCGGIKTITEBCLKHIIGSCKFQIKLTKYNENTSRQ
TITISRIIDTQIASLSESGEENSKDGDVECKVTATREKMHANQKQPNQPHQMETRINV
                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence=not_experimental
/protein_id="BAB02913.1"
/protein_id="BAB02913.1"
/db_xref="G1:1194675"
/translation="MG1ELLLINSQSNAVQGFLYANRLFRYEBALKRNSIYKLSKFMI
/translation="MG1ELLLINSQSNAVQGFLYANRLFRYEBALKRNSIYKLSKFMI
TPCKKVYKVTDQKNGIFFNEKTSMILVHTGDNQIDEQKFRFRGFDTDIHETKQFLTWL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                         complement (2601. .4531)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  similar to unknown protein"
                                                                                                                                                                                                                                                                                                                 PYRQLNSHYLCLPFKIVSFS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /mol_type="genomic DNA"
/strain="Columbia"
     /evidence=not_experimental
/product="TNP2-like transposon protein-like"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone_lib="Mitsui P1"
                                                         codon_start=1
                                                                                                                                                        evidence=not_experimental
                                                                                                                                                                                                                                       /note="contains similarity to reverse transcriptase
yene_id:MIF6.2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'clone="MIF6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   organism="Arabidopsis thaliana"
                                                                                                          note="gene_id:MIF6.3"
                                                                                                                                                                                      codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chromosome="3"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             id:MIF6.
```

```
CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SGC
                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sgo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SdC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
               /evidence=not_experimental
/protein_id="BAB02915.1"
/db_xref="G1:11994677"
/translation="MEIRMINRYGEIRRRDKGVLIECDCNAKVVVATSRDPVTSGKLY
/translation="MEIRMINRYGEIRRRDKGVLIECDCNAKVVVATSRDPVTSGKLY
FSCPVEISVGPGRGCGFKRWTVALCDEFDMIKETIVMKKDLEAANKRVEAQAEKIF
FMEKKFEMLEMNYELEEVSVSIAKFDFFNLDFLVLSI"
complement(59847. .62584)
/note="gb]/AD15532.1
                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="MSDPRKTVLLNRFTPFDNIIEKIIPTNTLVDLVGARRYRMYEKY
LTQRCRDKRIHTSLQDYGQIVTWKCEVVGQMAVDFDSRFRSFRNDNIVIALTWMRIVR
YHTGPQHVTIENRSTISDVTTKHNIEEVVEIKMAVD"
join(51814. .52073,52153. .52303)
/note="gene_id:MIF6.12"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /codon_start=1
/evidence=not_experimental
/evidence=not_experimental
complement(join(50048. .50272,50377. .50477,50558. .50648))
/note="contains similarity to replication protein Al
gene_id:MIF6.11"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /evidence=not_experimental
46915 .49333
/note="contains similarity to maize transposon MuDR
gene_id:MIF6.14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45317. .45805
/note="contains similarity to transposon protein
gene_id:MIF6.9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /evidence=not_experimental
31287. .32408
/note="gb|AAC28227.1
                                                                                                                                                                                                                                                                         gene_id:MIF6.13
                                                                                                                                                                                                                                                                                                /evidence=not_experimental
/product="En/Spm transposon protein-like"
join(56737. 56895,56978. .57238)
/note="gb|AAD23021.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence=not_experimental
/protein_id="BAB02914.1"
/db_xref="GI:11994676"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene_id:MIF6.10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        join(11432. .11516,11658. .11884,11965. .12348)
/note="gene_id:MIF6.4"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /codon_start=1
/evidence=not_experimental
/product="retroelement pol polyprotein-like"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24807. .27906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
/evidence=not_experimental
/product="En/Spm transposon protein-like"
                                                                                                                                                                                                                    codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note="contains similarity to reverse transcriptase ene_id:MIF6.6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        imilar to unknown protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         product="reverse transcriptase-like protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         note="gene_id:MIF6.5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           note="gene_id:MIF6.8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         codon_start=1
                                                                                                                                                                                                                                                 lar to unknown protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  id:MIF6.
                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                            끊
                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                뮍
                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 1156;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SdO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SGD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                 81021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               81201 AACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGA
                                  1032 AAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGAC 1091
                                                                                                                                                                                                                                                 912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  732 AACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGA 791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 672 CATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGA 731
TCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGACA
                                                                                                                                               TCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGACA 1031
                                                                                                                                                                                                 CGGAACCGTTAACCGCGGAAGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAG
                                                                                                                                                                                                                                                                                                                                             CGGAACCGTTAACCGCGGAAGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAG 911
                                                                                                                                                                                                                                                                                                                                                                                                  AGCTCAAATCGTTTCCGGTTTTCTCCGAATCGAGTCCTCTCTACCACACAAACTCAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCTAACAGTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QCIQTIGTCFGINLLVQBVZINENFLLIDLIYGTDVDVILGYGGSQNLERQMLIMINQD
FSFFFHQQWTUCAKURELEQYTTKVZAWEQQKIDHYLEDKUVLKGGSKAMWGGI
AKDIPWKQKWSGBSLAKEILMKQKISGESRKNFSEIMLKVSRLKSAQTIGNYGGLEAQ
QGSLGYMPMGYKGVGEKQEEFPLRLIFIGKAGQSPRPFELFCGKVLGQDGSLFQKHKG
EKGGHLNLMLMTNTGGKSWLEAGICLKLQNGVFECCKIS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VFMLIEAIIRDKHIGFSSDYEGSQSHELSGGANIRRNSRKLNQVRDNKEGYIRSMKQS
EEINNNVAPRTEPYGDQATQVELMSFIMVEGNTYGYGNEWEGLLEDFKTIRQVKXQST
TEFTKGKDMRFYGFISCHKVVVVIDSGATNNFISDELALVLKLPTSTTNQASVLLGQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /evidence=not_experimental
/protein_id="BAB02916.1"
/protein_id="BAB02916.1"
/db_xref="GI:11994678"
/translation="MATQAAQTIPATIVIDLEAKLDQFVQNFEDKLDSIVQRLQAQQK
/translation="MATQAAQTIPATIVIDLEAKLDQFVQNFEDKLDSIVQRLQAQQK
EHRQGMREIFANFFEETACDEPFTMKNQEHHELHQSFQRRIILAGKEESILHKLAGED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /evidence=not_experimental
complement(68511. .68920)
/note="contains similarity to retroelement pol polyprotein
gene_id:MIF6.16"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /evidence=not_experimental
complement(65044...66581)
/note="gene_id:MIF6.15
unknown_protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 similar to unknown protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                similar to unknown protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           product="transposon protein-like"
|oin(76751. .76987,77108. .77205,77372. .77517,78184. .79343)
|note="95|AAC61827.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     codon_start=1/evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  note="gene_id:MIF6.17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             evidence=not_experimental
9470. .73170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   odon start≈1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      51.8%;
85.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           id:MIF6.18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 949.4; DB 8;
Pred. No. 4.8e-229;
0; Mismatches 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 82347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels 183;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                81082
80842
                                                                                               80902
                                                                                                                                                                                                 80962
                                                                                                                                                                                                                                                                                                      81022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     81142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    81202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ŋ
```

```
DEFINITION
ACCESSION
VERSION
                                                                                                           RESULT 9
AB097404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δÃ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            멅
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
  KEYWORDS
                                                                                        FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             80241 AACCATATAGTTTAGTTAATAGATTTTGGATTTGGTTTACTAATGTTGGTATTGGTTATT 80182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80421
                                                                                                                                                                                                                                                                                                                                                                                     80061 AAAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTGGCTAAATA 80003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1092 TGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGA 1151
                                                                                                                                                                                                                                               1809 TATCAATAAAATGCTTTTTACTTT 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1480 ACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGAT 1539
                                        αυσ μρ mkwA linear PLN 21-JUN-
Raphanus sativus ProDH mRNA for proline dehydrogenase, partial
AB097404
                       AB097404.1 GI:32140552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCAGGATGGAACTTAAGAGGAGATTAATCGCCGGGATTGCGTAAAGAGAGTATGGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGA 80422
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTTACTAATTGTAGAAATGTTTTAATCTCAGGGAGACTTGCGTCGAGGAAAAGCGAGTGA 80482
                                                                                                                                                                                                                                                                                             TTTTTCATGAGGGACTATGTTTTTACTATCAATATCACTTCACAAATGTATATTCACCT
                                                                                                                                                                                                                                                                                                                                 TTTTTCATGAGGGACTATGTTTTTACTATCAATATCATTCACAAATGTATATTCACCT 1808
                                                                                                                                                                                                                                                                                                                                                                                                                            AAAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTGGCTAAATA 1748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATTAAATGAAATTGGGAAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAAATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAAATTG 1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGCCACCGGAGCTCATGACCGTCAACTCATGAGGTAGTTAACACCCTTGATTAGTTCTTT 80242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGCCACCGGAGCTCATGACCGTCAACTCATG------1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGCATTGTCCTTCGGGTTAAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTAAGCCATTAAATCACATTGTAACCGCGGTTTTTTTAGCGCTTTAGTTTAGAGTGAAATG 80542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACACATAACGCTGATTCG- 1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCCACGACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GAGGGGCTTACATGTCTAGCGAAGCTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAG 1211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGGTTCAAGTTGGTGA 80782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGAT 80302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGA 1419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTCTCGCAACACATAACGCTGATTCGG 80602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ------GGGAGACTTGCGTCGAGGAAAGCGAGTGA 1359
                                                                                                                                                                                                      79917
                                                                                        PLN 21-JUN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1271
                                                                                                                                                                                                                                                                                             79942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            80062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           80662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 80722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL REFERENCE
                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                     묽
                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
δ
                                             밁
                                                                                 5
                                                                                                                                   밁
                                                                                                                                                                                                                          B
                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity Matches 579; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                               421
                                                                                           959
                                                                                                                                      361
                                                                                                                                                                                 668
                                                                                                                                                                                                                            301
                                                                                                                                                                                                                                                                         839
                                                                                                                                                                                                                                                                                                                     241
                                                                                                                                                                                                                                                                                                                                                                                                             181
                                                                                                                                                                                                                                                                                                                                                                                                                                                        719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      539 AGAAGCGTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCC
                                                                                                                                                                                                                                                                                                                                                                779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            659 AAATCTTTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCA 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Raphanus sativus (radish)
Raphanus sativus
Raphanus sativus
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
rosids; eurosids II; Brassicales; Brassicaceae; Raphanus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (02-DEC-2002) Masakazu Hara, Shizuoka Univ; 836
Shizuoka, Shizuoka 422-8529, Japan
(E-mail:masahara@ayr.shizuoka.ac.jp, Tel:81-54-238-5134)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hara,M., Sugano,Y. and Kuboi,T.
Drought-regulated expression of prolyl-tRNA synthetase genes in radish (Raphanus sativus) seedlings plant Sci. 165, 129-137 (2003)
2 (bases 1 to 669)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hara, M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCAATGCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGAC 1078
                                                                                                                                                                              ACAAACTCAGAACCGGAACCGTTAACCGCCGAAGAAGAACGGGAGCTCGAAGCAGCCCAC
                                                                                                                                                                                                                                                                       ACAAACTCAGAACCGGAACCGTTAACCGCGGAAGAAGAAAGGGGAGCTCGAAGCAGCTCAT 898
                                                                                                                                                                                                                                                                                                                     AAACTCTCGTGGAAGCTCAAGTCGTTCCCGGTTTTCTCCGATTCAAGTCCTCTACCAC
                                                                                                                                                                                                                                                                                                                                                             AAACTCTCATGGAAGCTCAAATCGTTTCCGGTTTTCTCCGAATCGAGTCCTCTCTACCAC
                                                                                                                                                                                                                                                                                                                                                                                                             ATCAGTCTCCTAAAACGAGTGAGCGATCTACTTCGATGGGAATACAAAAGTCAAAATTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTAGTCTTCTGAAAACGAGTGAGCGATCTGCTGCGGGGGAATACAAAAGTCCGAACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAATCCTTACCAACATCTCACTTTAGCTCAGTGGTCGTGAAGATAACCGCGATTTGTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGAGCGTTTACGAAGCTTCGGGGTCTTAAAGGTATGCTTGTGTACGGCGTGGAACATGCC
                                               GCTGAAGACACAATCCTCCAACCGGCGATCGATTACATGGCTTATTCATCAGCTATCATA 480
                                                                                      GCGGAAGACACAATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATG 1018
                                                                                                                                      GTAAGGATCCAAGAAATCTGTCGAAGATGCCAAGAGTCCAATGTACCTTTGCTGGTCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sugano, Y. and Kuboi, T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /codon_start=1
/product="proline_dehydrogenase"
/product="proline_dehydrogenase"
/protein_id="BAC78193.1"
/db_xref="GI:32140553"
/translation="RSYYEASGIKKGMLVYGVEHADDAATCDDNMQHFLRTIEAAKSLP
TSHFSSVYVKITAICPIELLKRVSDLLRWEYKSQNFKLSWKLKSFPVESDSSPLYHTN
SEPEPLIAEEERELEAAHVRIGBICRRCQESNVPLLVDAEDTIIQPAIDYMAYSSAII
STIDKURPIIYNTIQAYLRDAGERLHLAVQEAEREGVPMGFKLVRGAYMSSEATLADS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHKS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="ProDH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Raphanus sativus"
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      db_xref="taxon:3726"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene="ProDH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 525.6; I
Pred. No. 6e-12
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6e-122;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           , 68
```

Indels Length

<u>.,</u>

Gaps

0

120 658 60

180

838 240 778

300

CDS

SGS

```
FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AB011478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PUBMED
                                                                                                                                                                           source
                                                                                                                                                                                                           Instituted (02.000 MARR-1998) Yasukazu Nakamura, Kazusa DNA Research Instituted, Department of Plant Gene Research; 1532-3, Yana, Kisarazu, Chiba 292-0812, Japan (E-mail:ynakamu@kazusa.or.jp, Tel:81-438-52-3935, Fax:81-438-52-3934)
Address for correspondence: kaos@kazusa.or.jp Address for correspondence: kaos@kazusa.or.jp For the latest information on annotation of this clone, please see http://www.kazusa.or.jp/kaos/cgi-bin/agd_graph.cgi?c=MKD10
Genes with similarity to proteins in the databases are described in 'product' or 'note' qualifiers. Genes that have no significant protein similarity are described as 'unknown protein'.

The software programs used to predict genes include: Grail (Informatics Group, Oak Ridge National Laboratory, http://compbio.ornl.gov/Grail-1.3/),
GENSCAN (Chris Burge, MIT, http://CCR-081.mit.edu/GENSCAN.html),
NetGene2 (S.M. Hebsgaard, et al., CBS, Technical University of Denmark, http://www.cbs.dtu.dk/services/NetGene2/) and SplicePredictor (Volker Brendel, Stanford University, http://gremlinl.zool.iastate.edu/gi-bin/sp.cgi).
Genes encoding tRNAs are predicted by tRNAscan-SB).
This sequence may not be the entire insert of this clone. It may be shorter because we remove overlaps between neighboring submissions. The 5' clone is MBB18 and the 3' clone is K15E6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1199 TGCAAGTC 1206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           661 CACAAGTC 668
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 (bases 1 to 47460)
Nakamura, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Structural analysis of Arabidopsis thaliana chromosome 5. V. Sequence features of the regions of 1,381,565 bp covered by twenty one physically assigned Pl and TAC clones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosida; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98344145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and Tabata, S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis thaliana genomic AB011478 BA000015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA Res. 5 (2), 131-145 (1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AB011478.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AB011478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTAAGTTGGTGAGAGGCGCTTATATGTCTAGCGAAGCTACATTAGCAGATTCCCTGGGG 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTCAAGTTGGTGAGAGGGGTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGT 1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCGGTGAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGG 1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          T., Kotani, H., Nakamura, Y., Sato, S., Asamizu, E., Miyajima, N.
/clone_lib="Mitsui P1"
                          /clone="MKD10"
                                                                     db_xref="taxon:3702"
                                                                                                /mol_type="genomic DNA"
/strain="Columbia"
                                                                                                                                             organism="Arabidopsis thaliana"
                                                                                                                                                                                              Location/Qualifiers
                                                chromosome="5"
                                                                                                                                                                           .47460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GI:2924655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   bp DNA LL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ę
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     clone:MKD10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PLN 27-DEC-2000
```

```
/evideTice=not_experimental
/protein_id="GBB10132.1"
/protein_id="GBB10132.1"
/db_xref="GI:10176900"
/translation="MTTIRSSPSSSRCSNSSSSSSYSLASTSLSNRLETIFKKASELC
TLCDIEACVIYYGPDGELKTWPKEREKVRDIALRFNQLNEALRHKKSVNLHGFLNKKK
KNKGLKNPNKKKKTSLKNVNVLKYPLADHYSEDQVSQLTQSLELNVSKFQERLRFLES
QKQNETKEDHGSLTSISSLAQSLNSSQFSLENYNHGYNTLSQIPVSAKNNNPGHSFVS
NTQDYYSVQKSVNNNYGLKNQLMKHDLCGYEHNMCMSNHGDATFSQIFLSAKNNPQHSFVS
NTQDYYSVQKSVNNNYGLKNQLMKHDLCGYEHNMCMSNHGDATFSQIFLSAKNFNQDF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20850. .22640
/note="contains similarity to salt-inducible protein
gene_id:MKD10.5"
                                                                                                                                                                                                                                                                                                                                                                                                                            complement (22974...24254)
/note="gene_id:MKD10.6
pix||T13016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SWLVDGFYNQNXQDEITKLLEEFEKRGLCADVALYRGLIRRICKLEQVDYAKVLFESM
EKKGLVGDSVIFTMAYAYWRTGKVTEASALFDVMYNRRLMVNLKLYKSISASYAGDN
DVLRFFWSHVGDRCLISKSILREMNRSEVL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /evidence=not_experimental
/protein_id="BAB10130.1"
/protein_id="BAB10130.1"
/db_xref="GI:10176898"
/translation="MKETRKLKKSNLPKVTDKINAEETVGKKIQRKKNEKVSNVELSE
DPQAAQLQAKSSEKPNRKKIQKGKEIKSSPADGKLSGKMKKRKEKVGNVDISEPILEA
ISTEKVKEKKGKMKYKKKKAEEITRSSVEDLKRESKFKKSKKKKKMMTSKKENKI
EEEBDVYQISSGDEOCTRGMKKWVSDYYEGRPGLDELQKIDDFMTAHEERLEQEKQI
KEAKAAEGGWTVVVHHKGRKKITESSTGTAVGSFSQAALEDKIAKKKQSEPVAHGFYR
FQRRDAQRNALVTQVALQFVCPDSDELILGFVFYCLWTELLALQSKFEEDKKRIQQLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KLADSLGYKSPVHDTIQNTHDCYNDCMSFLMEKASNGSGIAVILATHNTDSGKLGARK ASELGINKENGKIEFAQLYGMSDALGEGLKEAGFNUSKYMPYGDTAIPYLIRRAYE NRGMMSTGALDRQLMKSLREELWLGEDTGDKCYSLEWSGKYRF COMPLEMENT (join(18366. .18538,18612. .18825,18919. .19016,19142. .19270,19580. .19690,19779. .19925,20024. .20137,20379. .20421))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TQVISELSLF8GYGGPSLSWSFFIWTDSLPSSKHSLQSSWKMILILIKHKHFKTAHQL
LDKLAGRELLSSPLVLRSLVGGVSBDFEDVSHVFSWLMIYYAKAGMINDSIVVEGQIR
SCGLKPHLQACTVLLMSLVKQRLTDTYWKLFXKMVKLGVVANIHVYNVLVHACSKSGD
PEKAEKLLSEMEEKGVFPDIFTYNTLISVYCKKSMHFEALSVQDRMERSGVAPNIVTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
/evidence=not_experimental
/protein_id="BAB10131.1"
/db_xref="GI:10176899"
/translation="MVNLLSANREALIAQSICATVLKGNWKNILKHKYDSGLLKSAIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation="manrflrpnlihrfstvspvgppttippilsfdqpkppvdldl
SDQARLFASVPISTLLRSTAILHATSIGPMVDLGSWLMSSKLMDTTVTRDLVLRIVKG
TFYDHFCAGEDAAAARRVSSVYESTGLKGMLVYGVEHAEDGGACDENIQKFIETVEA
                                                                                                                                                                                                                                                                                                                                                                                           similar to unknown protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MVSAVKVKKKMIESGLKLDMYSYKALIHGFCKVLELENAKEELFSMIEKGFSPGYATY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NSFIHGFSREGRMREATRLFREIKDDVTANHVTYTTLIDGYCRMNDIDEALRLREVME
SRGFSPGVVTYNSILRKLCEDGRIREANRLLTEMSGKKIEPDNITCNTLINAYCKIED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AARRFKPF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   similar to unknown protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene_id:MKD10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AKTLPSSHLSSVVVKITAICPMNVLKRVSDLLRWQYKNPNFKLPWKLNSFPVFSGLSP
LYHTTSEPEPLTVEEERELEKAHERLKSVCLRCQESNVPLLIDAEDTILQPAIDYMAY
WSAIMFNSDKDRPIVYNTIQAYLKDAGERLHLALRESEKMVVPIGFKLVRGAYMSSEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              similar to unknown protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       complement(join(2825. .3834,3928. .6934,6982. .7195))
/note="gb|AAF67363.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /note="emb|CAB41546.1|
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /product="proline oxidase precursor"
/protein_id="BAB10129.1"
/db_xref="G1:10176897"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /evidence=not_experimental
join(11289. .11792,12666. .13317,13401. .13641,13819. .13903)
/note="gene_id:MKD10.3"
                                                                                                                                                                                                                                                                                                                                                              codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /evidence=not_experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      id:MKD10.2
```

Sg

SG

CDS

SVSIQEESGLMQQELCGYDQNQNMSMGDITNNNFQVTCASVLESVNNFGLNQLMHKEF

```
Ś
                                                                                                                                                                                                                                                                                                               밁
                                                                      Ş
                                                                                                                      В
                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                              밁
                                                                                                                                                                                                                 당
                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 694;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                            12663
                                                                                                                                                                                                                                                                                                                                                                                                                                                       677 CACTITAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGA 736
                              TGTCTTAGATGTCAAGAATCGAACGTACCGTTACTAATTGATGCCGAAGACACCATTCTC 12962
                                                                                                                                                                                                                                                                                                                 GTTAGTGATTTGCTTCGGTGGCAATACAAGAACCCTAATTTCAAACTTCCATGGAAACTC 12782
                                                                                                                                                                                                                                                                                                                                                                                                          CCATTAACCGTAGAGGAAGAACGAGAGCTTGAAAAAGCTCATGAACGCCTCAAATCCGTG 12902
                                                                                                                                                                                                                 CCGTTAACCGCGGAAGAAGGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATC 916
                                                                                                                                                                                                                                                                                                                                                            GTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /evidence=not_experimental
/protein_id="BaB10135.1"
/db_xref="G1:10176903"
/translation="MDKEECSSSESGWTTYLSSPIKVDEDEVVDEDYYYEGYNIYNYS
SKVEHEEERNKDSDDSMASDASSGPNYQRFHQKNKALDLKNGKNEGNSKSKNDDDHHN
HYHDGKKTSNSYRKXDKKKRENKSTYRMK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              methyltransferase like protein"
/protein id="BAB10134".1"
/db_xref="G1:10176902"
/translation="MSTSSQSYPMSGGDDQHSYIHNSSYQKAGIDGVQEKARQYILEN
LDLLMNNPNLSTFTIADFGCSIGPNTFHAVQNIIDIVKLKHLKESQEDSRVAPLEFQV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /evidence=not_experimental
/product="pollen coat protein-like"
/protein_id="BABIO133.1"
/db_xref="GI:10176901"
/translation="MSSNSQNISFQAGQAKGQTQEKASTMMDKASNAAQSAKESLKET
GQQIKEKAQGATESVKNATGMNK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YFNDLPNNDFNTLFRTQPPSSKQBYFSVGVPGSPYGRVLPRNSIHIGNTSFTTHMLSK
VPEEVCDKNSLAWNKNYIHCNNLIEEVTEAYKVQFEKDMGVFLKARAEELVPGGLMIT
LGQCLPDGVAMYETWSGIVKDTIGDCLQDMATLGVTTEEKIEMFNLPVYFPQVSELKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          join(28872. .29210,29305. .29460,29525. .29608)
/note="contains similarity to H+-transporting ATPase
gene_id:MKD10.7"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AIEQNIRFTIEMMEIVSHPLEAVQLSNNFITSMYRAILSTVIERHFGGSVVDELFRQF
AKKLSEHPIDFEKCKKQMVYHIVLKRK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /evidence=not_experimental 32547. .33097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               unknown protein"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YGCHQNMSMGNINNNSFQHPWVSNADHTRRYKNL"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /evidence=not_experimental
/product="S-adenosyl_L-methionine:salicylic acid carboxyl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              join(40034. .40111,40260. .40934,41080. .41412)
/note="gene_id:MKD10.10"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /evidence=not experimental
join (34198. .34257,34452. .34520,34618. .34692)
/note="gene_id:MKD10.9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    'note="gene_id:MKD10.11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             codon start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'note="gene_id:MKD10.8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26.1%;
70.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .44129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .
.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 479.2; DB 8; Pred. No. 6.7e-110;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches 203;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 47460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AB046419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                             TITLE
                                                                                                                                                JOURNAL
                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13623 TAGACCGCCAACTTATGAGG 13642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                13143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1554 ATGACCGTCAACTCATGAGG 1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    977
Submitted (21-JUL-2000) Takeshi Nakano, RIKEN Institute, Plant Functions Laboratory; 2-1 Hirosawa, Wako, Saitama 351-0198, Japan (E-mail:tnakano@postman.riken.go.jp, Tel:81-48-467-9525,
                                                                                                                                                                                                                                                            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids; lamiids; Solanales; Solanaceae; Nicotiana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AB046419 1872 bp mRNA linear PLA Nicotiana tabacum cig1 mRNA, cytokinin inducible gene,
                                                                                                                                                                                                                                                                                                                                   Nicotiana tabacum
                                                                    Direct Submission
                                                                                             Nakano, T
                                                                                                                                                Published
                                                                                                                                                                                             Nicotiana
                                                                                                                                                                                                                 Nakano, T
                                                                                                                                                                                                                                                                                                                                                          Nicotiana tabacum (common tobacco)
                                                                                                                                                                                                                                                                                                                                                                                                            AB046419.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTATACCGTATCTTCCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTC 1553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGG 1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAACCAGCAATCGATTÁCATGGCGTÁTTGGTCGGCGATTÁTGTTCAATTCGGATÁAÁGAT 13022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATTGAAAAGGGCCGGTTTCAATGTGAGTAAGTACATGCCATACGGGCCGGTTGATACTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGAAAACGGGAAGATCGAGTTTGCGCAGCTTTACGGGATGTCGGATGCGTTATCTTTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTTATGATCCATGATAGGTAAACTAGGGGCAAGAAAAGCAAGTGAGCTAGGGATCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACATTGAACCATACTTATTACTCCATAAAAAAATCTTACACATGAAAATTCATTTTTTCT 13382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCTCAAATGGATCAGGCATTGCGGTCATTCTAGCTACGCATAACACAGACTCGGGTAAG 1332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGGAG- 1335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GACACAATTCAAAATACACATGATTGCTACAATGACTGTATGAGTTTCCTTATGGAGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAA 1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTTATATGTCTÄGTGÄÄGCTÄAGTTAGCAGÄTTCCTTGGGTTACÄÄGTCACCGGTTCÄC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCAC 1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGACAAAGAC 1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTGGCTTTACGAGAGTCAGAGAAAATGAATGTTCCTATTGGGTTTAAATTGGTGAGAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGAGCGCCGGTGAGAGACTGCAT 1096
                                                                                                                      olished Only in Da
(bases 1 to 1872)
                                                                                                                                                                                           tabacum mRNA for cig1, cytokinin inducible gene, complete
                                                                                                                                                                                                                                                                                                                                                                                                            GI:18253082
                                                                                                                                           Database (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ---ACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATA 1373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PLN 22-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 complete
```

1493

13502

13562

1433 13442 1335

13262

13142

```
Ś
                                                          Ъ
                                                                                                   S
                                                                                                                                                             밁
                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Tocal Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                            863
                                                                                                                                                                                                                  803
                                                                                                                                                                                                                                                                    808
                                                                                                                                                                                                                                                                                                                                                                           748
                                                                                                                                                                                                                                                                                                                                                                                                                            683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         443 TCGGTGACGCGTGGCATGGTTTTAGGGCCTTGTGAAAAGTACGTTTTTATGACCATTTTTTGC 502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  628 TTAĀĀĀĠĠĀĀTĠĊTTĠĀTTĀTĠĠĠĠŦĠĠĀĀĊĀTĠĊĀĀCŤĠĀĀĀĀTĠĀĠĊŤŤĠŦĠĀŤĊĀĠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  511 CCAATAGTCAAGGAGGTAATTCTGGGGTTTTGTAAAAGGTACATTTTATGAACATTTTTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     383 GCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAACTTATGGACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fax:81-48-462-4674)
     AAATGCCAAGAGTCCAATGTACCATTGTTGATTGATGCGGAAGACAATCCTCCAACCC 982
                                                                                                                                                             CTTCCACTTTTCTCTGATTCCAGCCCTTTTTATCACACTCCACAAAAGCCAGAGCCTCTA
                                                       ACGGTCGAAGAAGAACATGATCTACAATTAGCTCATGAAAGACTCATGACTATTTGCAAG
                                                                                                         ACCGCGGAAGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATCTGTAGG 922
                                                                                                                                                                                                             GATTTGCTGAGATGGGAACACAAGAATCCATCATTCAATCTCCCATGGAAGCAAAAGTCC
                                                                                                                                                                                                                                                                                                                   GATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCG
                                                                                                                                                                                                                                                                                                                                                                                                                       AGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGTATGAAGGTTTTTCTTCAGACTGCATCAACCAAGTCACTTCCATCCTTCTGGTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AACATGCAACAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTGGAAAAAGACTTAATTGAAGTACGCAGAACTGTTACTAAGCTGTCGGA---TGTCGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTATGAAGCTACTGGT 562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGACTGAGCCTATGGTTGACGTATGGTATATGGGTAATGAATTCAAAGCTCATGCATATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGTTTACGGGTGTGAACCTTAAAGTTGATAAGATCAACGTTGACACTTCAAATGGCA 450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTGTTGCATGCGGCG
                                                                                                                                                                                                                                                                                                                                                                        AGCTTTGTGGTAGTGAAGATAACAGCAATTTGTACACCTAAGCTTCTCAAAAGAATGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /protein id="bab83948.1"
/protein id="bab83948.1"
/db_xref="g1:18253083"
/translation="mankyvocpkapedlksfvrclntaptvppmnftgaydattvttp
/translation="hankyvirphedvksleficvstlklirsftltlonaatepmydvgikvmns
klmmmpivkbvilgfvkgtfyehfcagkdlievrrtvtklsdvglkgmldygvehate
mscoosmkvplotasstkslesssvsfvvvkitalctfvkllkmensullkrehknese
nlpmkokslplfsdssfyhtpokebeltvebeedlolaherelmtickkcleldvdll
idaedtalgpaldyfassalkyhkdddpmifgtioaylkussermylakkaaekmgv
pmgfklvrgaynsserelasrlgvospihdsieothocpnscaffmldeisngsgavv
lathnidsgklaaskaldlgirdsgklofaqlygmagglsgcaffmlagfgvskylpfg
lathnidsgklaaskaldlgirdsgklofaqlygmagglsgcaffmlagfgvskylpfg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PVEQVMPYLIRRAEENRGLLSTSAFDRQLMRKELTRRFKVATS"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="cytokinin inducible gene in cultured green tobacco
homolog of proline dehydrogenase/oxygenase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mol_type="mRNA"
cultivar="Samsun NN"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          product="CIG1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene="cig1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   'gene="cig1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     db_xref="taxon:4097"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               organism="Nicotiana tabacum"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 441.8; Ds o;
Pred. No. 1.2e-100;
"'amatches 527;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1872;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
                                                                                                                                                                927
                                                                                                                                                                                                                                                                                                                                                                                                                          742
                                                                                                                                                                                                                                                                 867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  687
                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                         VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 12
AK121010
LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          믕
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1163 ATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACA 1222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    886
The Rice Full-Length cDNA Consortium, National Institute of Agrobiological Sciences Rice Full-Length cDNA project Team:, Kikuchi, S., Satoh, K., Nagata, T., Kawagashira, N., Doi, K., Kishimoto, N., Yazaki, J., Ishikawa, M., Yamada, H., Ooka, H., Hotta, I., Kojima, K., Namiki, T., Ohneda, E., Yahagi, W., Suzuki, K., Li, C., Ohtsuki, K., Shishiki, T., Foundation of Advancement of International Science Genome Sequencing & Analysis Group:, Otomo, Y., Murakami, K.,
                                                                                                                                                                                                                                AK121010.1 GI:37990633
FILI_CNNA; CAP trapper.
Oryza sativa (japonica cultivar-group)
Oryza sativa (japonica cultivar-group)
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                        AKIZ1010 1782 bp mRNA linear PLN 29-OCT-200 OTYZA SATIVA (japonica cultivar-group) cDNA clone:J023047813, full
                                                                                                                                                                                                             Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                       insert sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GGGAAATGTAGAT 1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTAT 1522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAAAGGCTGCAGAGAAAATGGGAGTTCCAATGGGTTTTAAGCTTGTGAGAGGTGCTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGGCTTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAAGTGTATATAT 1714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCAGGAGATTTAAAGTGGCAACTTCATGAATCCATGAGTTATAGTCTTGAGAATTAATG 1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGAGGAGATTAATCGCCGGGATTGCGTAAAGAGAGAGTATGGAGCCATTAAATGAAATT 1642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGTATTTACCGTTCGGACCAGTAGAGCAAGTGATGCCATACCTTATACGGAGAGCTGAA 1581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGC 1462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCATCGAAGGCTATAGATCTAGGAATCAGAAAGGATAGTCAAAAAACTCCAATTTGCTCAG 1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AATGGCTCTGG---AGCAGTTGTTCTTGCAACTCATAATATTGACTCAGGAAAACTTGCT 1401
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AACGGTTCTGGTTTCGGTTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCA 1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCAATTGATTATTTTGCATATTCTGCAGCAATTAAGTATCACAAAGATGATGAC---CCT 1104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTATATGGTATGGCAGAAGGTCTTTCATTTGGCCTGAGAAATGCAGGATTTCAGGTAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAG 1402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTGAGCAAACACATGACTGCTTTAATTCTTGTGCTGAGTTTATGCTTGACGAGATTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGTCAAGTGAAAGAGAATTGGCTTCTCGTTTAGGTGTTCAGTCTCCAATTCATGATAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATCGTTTACAACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCA 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAATGCTTAGAACTTGATGTTGATTTACTTATTGATGCTGAAGATACAGCTATTCAACCT 1047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PLN 29-OCT-2003
```

PUBMED REFERENCE

JOURNAL MEDLINE

AUTHORS

TITLE

```
Richard, Y., Sugano, S., Pujimura, T., Suruki, Y., Tsunoda, Y.,
Narikawa, R., Sugiyyama, N., Mazuka, N., Kobayashi, M., Xis, O., Li, M.,
Narikawa, R., Sugiyyama, N., Mazuno, X., Yokomizo, S., Kikura, J.,
Ricda, R., Jihibki, J., Kawamata, M., Yochimura, A., Mura, J.,
Richard, T., Oka, M., Ryu, R., Ueda, M., Watsubara, K., RICKE, J.,
Rawal, J., Carninci, P., Adachi, J., Alazwa, K., Arakwa, T., Fakuda, S.,
Rawal, J., Carninci, P., Adachi, J., Alazwa, K., Arakwa, T., Fakuda, S.,
Rawal, J., Carninci, P., Adachi, J., Alazwa, K., Arakwa, T., Fakuda, S.,
Sagawa, J., Sondo, B., Sennowi, M., Inchani, K., Carninci, P., Doi, K.,
Sagawa, J., Sondo, B., Sennowi, M., Inchani, K., Carninci, P., Doi, K.,
Sagawa, J., Sondo, B., Sennowi, M., Picka, K., Shikaswa, M., Shiraki, T.,
Sonhino, M., and Hayashiraki, Y., Shikaswa, T., Carninci, P., Doi, K.,
Badchi, J., Alazwa, K., Akimura, T., Arakwa, T., Carninci, P., Doi, K.,
Haylanida, K., Handshira, R., Marte, M., Wayasa, T., Marte, M., Marte, M., Magata, J., Kanagawa, K., Kathika, T., Kodama, T., Kodama, T., Kojima, K., Kojima, K., Kojima, K., Kodio, S., Konco, H., Kodak, M.,
Koya, S., Kurihara, C., Kursaki, T., Kushimoto, N., Kobayashi, M.,
Koya, S., Kurihara, C., Kursaki, T., Kushimoto, N., Kobayashi, M.,
Koya, S., Kurihara, C., Kursaki, T., Kushimoto, N., Kobayashi, M.,
Koya, S., Kurihara, C., Kursaki, T., Kashimoto, N., Kobayashi, M.,
Koya, S., Kurihara, C., Kursaki, T., Kashimoto, N., Kobayashi, M.,
Koya, S., Kurihara, C., Kursaki, T., Kashimoto, N., Kobayashi, M.,
Koya, S., Kurihara, C., Kursaki, T., Kashimoto, N., Kobayashi, M.,
Koya, S., Kurihara, C., Kursaki, T., Kashimoto, N., Kobayashi, M.,
Koya, S., Kurihara, C., Kursaki, T., Kashimoto, N., Kobayashi, M.,
Kodama, T., Kojima, K., Solima, K., Konoo, H., Koda, M.,
Coka, H., Osato, N., Oca, Y., Ocono, Y., Ryu, R., Satkah, H., Sakai, C.,
Sakai, K., Sakai, C., Sackai, M., Sackai, C., Sakai, K., Sato, K., Sackai, C.,
Sakai, K., Sakai, C., Sakai, M., Sato, M., Sackai, C., Sakai, K.,
Sakai, K., Sakai, C., Sakai, K., Sakai, C., Sac
```

JOURNAL REFERENCE AUTHORS

TITLE

JOURNAL

COMMENT

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                     g
                                                                                                                                S
                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 뭐
                              Ś
                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     source
1109 TGCCTCGCGCTCAAGCTGGTCCGCGGCGTACCTGGCGCGCGAGGCCCGCCTCGCGGCC 1168
                                     1130 CCTATGGGGTTCAAGTTGGTGAGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGAT 1189
                                                                                        1049 CTCCGCGACGCGCGACCGGCTGGAGGCCATGGCGCGAGCGGCGCAGGGGCGAGCGCGTG 1108
                                                                                                                                  1070 ТТОАСАСАССССССТСАСАСТССАТТТСССАСТАСАДАЛССССАСДАДАЛСАСТСТ 1129
                                                                                                                                                                                                                             1010 СССАТСАТСТТСТАТСТСАСАТАТСТСТАТСТАТССТТТАСТАТСТАССТТСТАСССТАС 1069
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               518 GCGGCGGTGCGCCTCTGGCGCG---GCGGCATGGGCGGGATCCTCGACTACGGCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               830 СТСТАССАСАСАЛААСТСАБААССЕБВАССЕТТААССЕСБВАБААБВААБВЕСТСБВА 889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            692 CTGTGCCCGGTCGCGTTGCTGGAGAAGGCGAGTGATCTGCTGCGGTGGCAGCAGAAGCAC 751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 350 CTCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGG 409
                                                                                                                                                                                                                                                                                                                                                                                                                     890 ССАССТСАТССААССАТТСААСААЛСТСТАССААЛСССААССАСССААТСТАССАТТС 949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    650 GAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         458 GCGGCGAGGGCCACCGCGTACCAGCACTTCTGCGCCCGGGGAGACCGGCGGAGGAGGCCGCC 517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      470 CTTGTGAAAAGTACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCT 529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    410 ACGTGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTTAGGG 469
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 347 CTGGTGCGCACGCTCGCCGTGCTGCAGGCGCTGTCGGTGGGCCCCGCTCGTGGACGTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                694; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Shinagawa,A., Shiraki,T., Sogabe,Y., Tagami,M., Tagami-Takeda,Y., Tagawa,A., Takahashi,F., Takahashi,F., Takaku-Akahira,S., Tanaka,T., Tomaru,A., Toya,T., Waki,K., Yasunishi,A. and Hayashizaki,Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                          ATGGCGCACGGGCGGCTGCTGGCGATCGGCGAGCGGTGCGCGGAGTACGACATCCCGCTG 931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGT 769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTGGTGGACGCCGAGTACGCCACCGTGCAGCCGGCGATCGACTACTTCACGTTCGCCGGC 991
                                                                                                                                                                                                                                                                                                                          CTGTACCTGACGGCGGCGGAGCCGCCGGCGCTGGAGGCGAGGAGGAGGAGGAGCTCGAG 871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCGGCGACGAAGCTGCCATGGAAAGTGCACGGGTTCCCCGGTGCTGTGCGTCTCCAGCCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCGGTTTTCTCCGAATCGAGTCCT 829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GACGTCGCCGCGCGCGCCTCCTGGCTCGGCGAGC---GTGTGCATCAAGATCACGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGGACGCCGAGGACGGCCCGCCTGCGACCGCAACGCCGCCGGATTCCTCGCCGCCATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGCGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTC
                                                                                                                                                                                GCGCTGGCGTTCAACGGCGGC---GGGAGGCCCATCGTGCACGGCACCGTCCAGGCCTAC 1048
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Oryza sativa (japonica cultivar-group)"
/mol type="mdNA"
/cultivar="Mipponbare"
/db_xref="taxon:39947"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="J023047B13"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       14.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 274; DB 8; Length 1782; Pred. No. 4.1e-58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches 560; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
```

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 13
AF171226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOURCE
ORGANISM
            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                  gene
                                                                                                                                                                   SGD
                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1526 TCCTCCTTCGACAGACAGCTGCTCCGGAAGGAGCTTGTGAGGAGGTTCAAGGCTGCAATG 1585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1346 GGCGGCGGCGACCGCGGCCTGCAGTTCGCGCAGCTGATGGGCATGGCGGATGGCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (23-JUL-1999) Physiologie et Biochimie Vegetales, UMR 6553, Avenue du General Leclerc, Rennes 35042, France Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                         Deleu,C., Niogret,M.-F. and Larher,F.

Isolation of a partial proline dehydrogenase cDNA from rape seed
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Brassica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Brassica napus proline dehydrogenase (pdh) mRNA, partial cds
                                                                                                                                                                                                                                                                                                                                                     2 (bases 1 to 333)
Deleu,C., Niogret,M.-F. and Larher,F.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Brassica napus (rape)
Brassica napus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AF171226.1 GI:5726626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF171226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGGGACGTGAGTGAAAG 1603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGTAAAGAGAGTATG 1624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGAT-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCCGGTGTCGTTCTC 1309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGATTAATCGCCGGGATT 1606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCACGCACAACGTCGAGTCCGGGCAGCTCGCCGCGGCGAGGGCGCTGGAGCTCGGCATC 1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GECTGCGCCGCGTTCCTCCGACCGCGTCCGCCGCGGCGCCG---CCGCCGTGACGCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCCTCGGCGTGCCGTCGCCGGTCCACCGCAGCATCCAGGACACCCACGACTGCTACAAC 1228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGCAGATCATCCCGTACCTCATCAGACGAGCAGAGAGAACAGGGGATTGCTCTCGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTTGGACCCGTC 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCGCTCGGCCTCCGCAACGCCGGGTTCCAGGTGAGCAAGTACCTGCCGTACGGTCCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --CGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTG 1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 333
                                             GVVLATHNADSGRLASKKASELNIDKENGKI EFAQLYGMSDALSFGLKRAGFNVSKYM
                               PFGPVETAI"
                                                            /product="proline dehydrogenase"
/protein_id="AAD48490.1"
/brotein_id="AAD48490.1"
/db_xref="GI:5726627"
/translation="SSEARLADSIGHKSPVHDTIQNTHDCYNNCMTFLMEKASNGSGF
                                                                                                                                               'gene="pdh"
                                                                                                                                                                                  /gene="pdh"
                                                                                                                                                                                                               cultivar="oleifera"
/db_xref="taxon:3708"
                                                                                                                                                                                                                                                                      organism="Brassica napus"
                                                                                                                                codon_start=1
                                                                                                                                                                                                                                                      type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         333 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TIRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear PLN 11-AUG-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 14
AX653926
LOCUS
DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                  멼
                                                                                                 Ś
                                                                                                                                    밁
                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           В
                           Ş
                                                                                                                                                                                                      片
                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                              ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                source
```

```
Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          y Match 14.2%;
Local Similarity 86.5%;
hes 288; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1166 TCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACAATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301 TACATGCCATTCGGACCGGTCGAAACCGCTATA 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                   689 GTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTG
                                                                                                                                                                                                                                                                                 629 CAACAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCA 688
                                                                                                                                                                                                                                                                                                                                                                                                 569 GGGATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACATG 628
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                             67 GCCGGATTCCTCGCCGCCATCGACGTCGCCGCGCGCGCTGC---CTCCTGGCTCGGCGAGC 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Oryza sativa
Oryza sativa
Oryza sativa
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Shrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Chang, H.S., Chen, W., Cooper, B., Glazebrook, J., Goff, S.A., Hou, Y.M., Katagiri, F., Quan, S., Tao, Y., Whitham, S., Xie, Z., Zhu, T. and Zou, G. Plant genes involved in defense against pathogens Patent: WO 03000898-A 3796 03-JAN-2003; Syngenta Participations AG (CH) Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AX653926 1227 bp DNA
Sequence 3796 from Patent WO03000898.
AX653926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AX653926.1 GI:29156740
                                                      CTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCG 808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TACATGCCGTTTGGACCCGTCGCAACCGCTATA 1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAAC 1285
CTGCGGTGGCAGCAGAAGCACCCGGCGACGAAGCTGCCATGGAAAGTGCACGGGTTCCCG
                                                                                                                GTGTGCATCAAGATCACGGCGCTGTGCCCCGGTCGCGTTGCTGGAGAAGGCGAGTGATCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TACGGTATGTCAGATGCATTGTCCTTCGGTTTAAAGAGAGCCGGGTTCAATGTTAGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCCAGGGTTCAATGTTAGCAAG 1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAGAAAGCAAGTGAGCTCAATATCGATAAAGAGAACGGGAAGATAGAGTTTGCGCAGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTA 1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGTTCTGGTTTCGGTGTCGTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCG 1345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGAACACGACGATTGCTACAATAACTGCATGACTTTCCTAATGGAGAAAGCCTCAAAC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTAGTGAAGCTAGGCTGGCAGATTCCTTGGGGCACAAGTCACCAGTCCACGACAATT
                                                                                                                                                                                                                                                                                                                                          GGGATCCTCGACTACGGCATCGAGGACGCCGAGGACGGCCCCGCCTGCGACCGCAACGCC 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GETTCGGGCTTCGGTGTGCTTCTTGCAACACATAACGCTGATTCTGGGAGACTTGCATCA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /mol_type="unassiqued DNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   db_xref="taxon:4530"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           type="unassigned DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 261; DB 8;
Pred. No. 6.3e-55;
0; Mismatches 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 258; DB 6;
Pred. No. 4.4e-54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches 457; Indels 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 6; Length 1227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 8; Length 333;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAT 22-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <u>6</u>
         243
                                                                                                                                                                            748
                                                                                                                         183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5
REFERENCE
                                                                                                                                                                                                                                                RESULT 15
AP006372/c
                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                           DEFINITION
                                                                                                                                   KEYWORDS
                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1169
                                                                                                                                                                                                                                                                                                                                1018
                                                                                                                                                                                                                                                                                                                                                                                                                                               1526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1466 TACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1289 TCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGG 1348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        869
                                                                                                                                                                                                                                                                                                                                                                                                          958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                838 ATGGGCATGGCGGATGGCCTCTCGCTCGGCCTCCGCAACGCCGGGTTCCAGGTGAGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  809
                                                                                                                                                                      Aruub3/2 84914 bp DNA linear PLN 22
Lotus corniculatus var. japonicus genomic DNA, chromosome
clone:LjT36C05, TM0215b, complete sequence.
AP006372
                                Lotus corniculatus var. japonicus (Lotus japonicus)
Lotus corniculatus var. japonicus
Lotus corniculatus var. japonicus
Eukaryota, Viridiplantae, Streptophyta; Embryophyta; Tracheophyta;
Eukaryota; Viridiplantae, Streptophyta; endicotyledons; core eudicots;
Spermatophyta; Magnollophyta; eudicotyledons; core eudicots;
rosids; eurosids I; Fabales; Fabaceae; Papillonoideae; Loteae;
                                                                                                                                       HTG
                    Lotus.
                                                                                                                                                      AP006372.1 GI:31581003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACACCCACGACTGCTACAACGGCTGCGCCGCGTTCCTCCTCGACCGCGTCCGCCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACAATTCAG 1226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGTCT 1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACGGCACCGTCCAGGCCTACCTCCGCGACGCGCGCGACCGGCTGGAGGCCATGGCGCGA 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACAACACGATTCAGGCGTACTTGAGAGAGCGCCGGTGAGAGACTGCATTTGGCAGTACAA 1108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GACTACTTCACGTTCGCCGGCGCGCGGGGGTTCAACGGCGGC---GGGAGGCCCATCGTG 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GIGCIGIGCGICTCCAGCCCGCIGIACCTGACGGCGGCGGAGCCGCCGGCSCTGGAGGCG 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TATEGTATETCAGATECATTETCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAAGCGAGTGACCTCGGGATC---GATAAACAGAACGGGAAGATAGAGTTTGCACAGCTA 1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGT 1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGCGAGGCCCGCCTCGCGGCCTCCCTCGGCGTGCCGTCGCCGGTCCACCGCAGCATCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGGCGCAGGGCGAGCGCGTGTGCCTCGCGCTCAAGCTGGTCCGCGGCGCGCGTACCTGGCG 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCGGAGTACGACATCCCGCTGCTGGTGGACGCCGAGTACGCCACCGTGCAGCCGGCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAAGAGTCCAATGTACCATTGTTGATTGATGCGGAAGACACAATCCTCCAACCCGCGATC 988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGGAGGAGAGCTCGARATGGCGCACGGGCGGCTGCTGGCGATCGGCGAGCGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAAGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGC 928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GITTTCTCCGAATCGAGTCCTCTCTACCACACAAACTCAGAACCGGAAACCGTTAACCGCG
                                                                                                                                                                                                                                                                                                                                AGGAGGTTCAAGGCTGCAATGCTGGGACGTGACA 1051
                                                                                                                                                                                                                                                                                                                                                                                                                                               AACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGGGCGCTGGAGCTCGGCATCGGCGGCGGCGGCGACCGCGCCCTGCAGTTCGCGCAGCTG 837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCCG----CCGCCGTGACGCTCGCCACGCACAACGTCGAGTCCGGGCAGCTCGCCGCGGCG
                                                                                                                                                                                                                                                                                                                                                                   AGGAGATTAATCGCCGGGATTGCGTAAAGAGAGA 1619
                                                                                                                                                                                                                                                                                                                                                                                                        AACAGGGATTGCTCTCGTCTTCCTCCTTCGACAGACAGCTGCTCCGGAAGGAGCTTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TACCTGCCGTACGGTCCAGTGGAGCAGATCATCCCGTACCTCATCAGACGAGCAGAGGAG
                                                                                                                                                                                                                                  PLN 22-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    868
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1585
                                                                                                                                                                                                                                                                                                                                                                                                            1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  897
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
    밁
                                     S
                                                                                밁
                                                                                                               Ś
                                                                                                                                                        밁
                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 410;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  58895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sato, S.
```

```
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         58835 GTGACTTGCTGAGATGGCAGCAGAAAGACCCTTCATTCAATTTGCCATGGAAGCAAGATT
58298 CTAATGGCCCTGGT---GGGGTTGTTCTTGCAACTCACAATGTCGAATCAGGTAG 58247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 681 TTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (07-MAY-2003) Shusei Sato, Kazusa DNA Research Institute, Department of Plant Gene Research, 2-6-7 Kazusa-kamatari, Kisarazu, Chiba 292-0818, Japan (E-mail:ssato@kazusa.or.jp, URL:http://www.kazusa.or.jp/, Tel:81-438-52-3935(ex.2337), Fax:81-438-52-3934)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Asamizu,E., Kato,T., Sato,S., Nakamura,Y., Kaneko,T. and Tabata,S Structural Analysis of a Lotus japonicus Genome. IV. Sequence Features and Mapping of seventy-three TAC clones which cover the 7.5 Mb Regions of the Genome DNA Res. (2003) In press

2 (bases 1 to 84914)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAAGTGCGTGCAGGCCAATATTCCTTTGTTGGTTGATGCAGAGCACACTGCAGTTCAAC 58596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TGAGCTTTGTCATTGTGAAAATCACTGCAATATGTCCCATGAGTCTGCTAGAAAGACTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGĄĄĄTGCCĄĄGĄGTCCĄĄTGTĄCCĄTTGTŢGĄŢGĄTGCGGĄĄGĄCĄCĄĄTCCTCCĄĄC 980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TAACCGCGGAAGAAGAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATCTGTA 920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAAT
                                                         CAAACGGTTCTGGTTTCGGTGTCGTCTCGCAACACATAACGCTGATTCGGGGAG 1335
                                                                                                                                                                                 CAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCAT
                                                                                                                                                                                                                                                 ATATGTCAAGTGAAAGGAGTTTGGCTTCGTCTTTGGGATATGCATCTCCAATTCATAATA
                                                                                                                                                                                                                                                                                                              ACATGICTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACA 1220
                                                                                                                                                                                                                                                                                                                                                                          CAACCGAGGCTGCTGAGAAAATGGGTGTCCCAATGGGGTTCAAATTGGTGAGGGGTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                   CAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCATCGTGTTTGGAACCATTCAAACATACCTGAAAGATGCCAAGGAGAGAGGCTGCTGG 58479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGCTATTGATTACTTCACATACTCTTCTTCCATTGTGCACAACAAAGGAGAGAAC--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGACAAAGACCGAC 1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAACCCGTGAAGAAGAGAGTGATCTTGAGCTTGCCAATCAGAGATTCCTTGAGCTTTGCC 58656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTTGCCAATTTTTGCCAAGTGCAGCCCTTTGTACCACACCCGGAAGACCGGAGCCCC 58716
                                                                                                                        CCATCCAGGACACGCACAAGTGCTTTAATGACTGCTCATCTTATCTGCTTGAGAAGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     japonicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1. .84914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="LjT library"
/note="TM0215b, a part o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone="LjT36C05"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            db_xref="taxon:34305"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /varīety="japonicus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        organism="Lotus corniculatus var. japonicus"
/mol_type="genomic DNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 240.6;
Pred. No. 2.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .6; DB 8;
2.2e-49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of TAC clone: TM0215.~synonym: Lotus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 84914;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 <u>ه</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            58836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            740
                                                                                                                                                                                                                                                                                                                                                                                                                                                1160
                                                                                                                                                                                                                                                           58359
                                                                                                                                                                                                                                                                                                                                                                                    58419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      58539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2
```

Search completed: March 10, 2004, 19:22:16 Job time : 6892.99 secs

```
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                           Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run on:
                                                                                                                                                                       Database
                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
1987....
10....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           March 10, 2004, 09:18:05; Search time 628.751 Seconds (without alignments)
12384.789 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                  3373863 segs, 2124099041 residues
                                                                                                                                                                                                                                                                                                                                                                                                 Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-026-767-3
1833
                                                                                                                                                                      N_Geneseq_29Jan04:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                     agcgtttagaaaaaaacagc.....ataaaaatgctttttacttt 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.
              geneseqn2003bs: *
geneseqn2003cs: *
                                                                                                                                    geneseqn1990s:*
                                                   geneseqn2003as:*
                                                              geneseqn2002s:*
                                                                               geneseqn2001bs:*
                                                                                                       geneseqn2001as:*
                                                                                                                    geneseqn2000s:*
                                                                                                                                                       geneseqn1980s:*
geneseqn2004s:*
                                                                                                                                                                                                                                                                                                                                    6747726
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	BB	ID	
1	1833		1833	7	ABX93779	Abx93779 Thale cre
NI	. (1835	w	~1	Aac47865 Arabidops
w	764.	9	1844	w	AAC41972	N
4.	•	•	1837	w	\vdash	
ហ	1680.8	91.7	1687	w	AAC50748	œ
o.	•	81.3	1500	7	ADA68100	_
7	. 7	79.5	1461	σ	ABZ13606	
80	1280.	69.9	1339	σ	ABN98243	
Q	474.	25.9	1850	4.	AAF87062	
c 10		23.9	475	თ	ABL93291	Ara
	279	15.3	2596	4.	AAF87063	
12		14.1	1227	7	ADA70473	Ada70473 Rice gene
13	u	8.2	2000	σ	ABZ16299	φ
14		8.2	2000	7	ADA69271	Arabic
15	123	6.7	1494	σ	ABN84373	Mouse
16	123.	6.7	1494	ω	ADB38895	Mouse
17	123.	6.7	2240	σ	ABN84376	6 Mouse
⊔ 1	123.	6.7	2240	φ	ADB38899	Mouse p
c 19	119.	ი. Մ	121	თ	ABK25630	Stress
		ი. წ	121	σ	ABK25641	Abk25641 Stress to
21		6. 5	121	σ	ABK25637	Stress
22		6. 5	121	σ	ABK25645	Stress
23	119.4	ი	121	σ	ABK25646	Abk25646 Stress to

Claim 3; Page 37-42; 52pp; English.

tolerance.

New grass plant overexpressing a PSCS gene from rice, useful for making transgenic plants with higher levels of proline accumulating ability, and more improved salinity-tolerance, drought-tolerance and low temperature-

																						•
								U	Ü	ი								ი			ი	a
4 U	44	£.	3 1	4	41	40	39	38 8	37	36	υ 5	34	ü	3	31	30	29	28	27	26	25	24
56.2					57.4	58.8	65.4	65.8	68	68	68.8	86.2	105.6	105.8	107.2	107.2	107.2	117.8	117.8	119.4	119.4	119.4
3.1	ن. ب			3. 1	3. ₁	ω .2	ა . 6	ა. 6	3.7	3.7	3.8	4.7	5.8	5. B	5. 8	υ 60	ம	6.4	6.4		6. 5	6.5
3752	3471	17.1	,	3357	413	465	876	219	567	567	2474	1896	2961	2565	2389	2389	1551	121	121	121	121	121
4	4	4	`	4	7	æ	4	N	9	σ	σı	ហ	4	Q	φ	თ	9	σ	σ	σ	σ	ė
ABL17013	ABLUZSSI	7001	70117041	ABL17027	ABX48921	ACH15079	AAS41315	AAZ33823	ADB57592	ABK63296	AAS86282	AAS86281	AAH14213	ADB62131	ADB38901	ABN84372	ADB38902	ABK25634	ABK25633	ABK25629	ABK25642	ABK25638
ADII/UIS DIOSOPILI	•		Abl17041 Drosophil	Abii7027 Drosopnii		_					DNA	DNA	Hum	•	Human	Human	Human			Stress	Stress	Stress

ALIGNMENTS

RESULT 1
ABAST 79
ID ABX99
ID ABX99
XX ABX9
XX Gras
CF Thal
XX Gras
KW Prol
XX Prol
XX Prol
XX Prol
XX Prol
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Arab
XX Grass; delta^1-pyrroline-5-carboxylate synthetase; PSCS; gene; ss; proline dehydrogenase; ProDH; stress tolerance; water tolerance; ca. salt stress; salinity tolerance; temperature tolerance; protoplast; proline accumulation; thale cress; antisense. ABX93779; GB2376236-A. Thale cress proline dehydrogenase (ProDH) antisense cDNA. 17-JUN-2003 (first entry) ABX93779 standard; cDNA; 1833 BP. Arabidopsis thaliana. 08-JUN-2001; 2001JP-00174553. 24-DEC-2001; 2001GB-00030946. 11-DEC-2002. P-PSDB; ABU09031. WPI; 2003-203644/20. Yoshiba Y, Shinozaki K; (HITA) HITACHI LTD. (BIOO-) BIO-ORIENTED TECHNOLOGY RES ADVANCEMENT. (INDE-) INDEPENDENT ADMINISTRATIVE INST NAT INST. (RIKE) RIKEN KK. Location/Qualifiers /product= "Thale cress ProDH"

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                   B
                                                                                                   S
                                                                                                                                       밁
                                                                                                                                                                  Ś
                                                                                                                                                                                                             용
                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to a grass plant in which a delta'1-pyrroline-5-carboxylate synthetase (P5CS) gene of rice, or a P5CS gene of Arabidopsis thaliana and the antisense gene of a proline dehydrogenase (ProDH) gene of Arabidopsis thaliana, have been introduced in tandemly connected relation to each other. A new method of the present invention is useful for the production of a transgenic rice plant with improved stress. The tolerance, especially for water or salt stress and low temperatures. The invention provides for transgenic plants with a higher level of proline accumulating ability. The invention also relates to a grass plant obtained by introducing a vector comprising a gene of the invention into a calli or protoplast derived from a grass plant, growing the calli or protoplast to obtain a colony and regenerating a plant body from the calli or colony. This sequence represents DNA encoding the thale cress ProDH polypeptide of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1833 BP; 521 A; 411 C; 421 G; 480
                                                                     661
                                                                                                       661
                                                                                                                                       601
                                                                                                                                                                         109
                                                                                                                                                                                                             541
                                                                                                                                                                                                                                               541
                                                                                                                                                                                                                                                                                   481
                                                                                                                                                                                                                                                                                                                     481
                                                                                                                                                                                                                                                                                                                                                       421
                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1833;
721
                                 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                      TAGTCTTCTGAAACGAGTGAGCGATCTGCTGCGGGGAATACAAAAGTCCGAACTTCAA
                                                                                              ATCTTTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAAT
                                                                                                                                                                                                                                      AAGCGTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGA
                                                                                                                                                                                                                                                                                 TACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAG
                                                                                                                                                                                                                                                                                                        TACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAG
                                                                                                                                                                                                                                                                                                                                                     GAGCTCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                         GAGCTCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CACCGCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGATCTCTCCGATCAAGCCCGTCTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGATCTCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACAAGCACCGGAACCACCTTTCACCACCCAAAACCCACCGAGCAATCTCACGATGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACAAGCACCGGAACCACCTCTTCACCACCCAAAACCCCACCGAGCAATCTCACGATGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGTCTTCTCCGAACAAACTTTATCCGGCGATCTTACCCGTTTTACCCGCTTTTAGCCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGAAATTATTTTTTTTTTGTTTTTCGTTTTTCAAAAACAAAATCTTTGAATTTTATGGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGAAATTATTTTTTTTTTTTGGTTTTTCAAAAACAAAATCTTTGAATTTTTATGGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TAGTCTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAA
                                                                     ATCTTTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAAT
                                                                                                                                       AAGCGTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                           CACCGCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGTCTTCTCCCGAACAACTTTATCCGGCGATCTTACCCGTTTACCCGCTTTAGCCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 1833;
100.0%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ٥,
                                                                                                                                                                           660
                                                                                                                                                                                                                                                                                                                                                                                                                                                             420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60
                                 780
                                                                   720
                                                                                                                                                                                                             600
                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                     540
                                                                                                                                                                                                                                                                                                                                                       480
                                                                                                                                                                                                                                                                                                                                                                                                                            420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
780
                                                                                                                                       660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                         Ś
                                                                                    밁
                                                                                                                    S
                                                                                                                                                                                     S
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   片
                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                          1681
                                                                                                                                                                                                                                                                1621
                                                                                                                                                                                                                                                                                                                                                                        1501
                                                                                                                                                                                                                                                                                                                                                                                                        1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACTCTCATGGAAGCTCAAATCGTTTCCGGTTTTCTCCGAATCGAGTCCTCTCTACCACAC
                  ATTCACCTTATCAATAAAATGCTTTTTACTTT 1833
                                         ATTCACCTTATCAATAAAAATGCTTTTTACTTT 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTTCGGTGTCGTTCTCTCGCAACACATAA 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACTCTCATGGAAGCTCAAATCGTTTTCCGGTTTTCTCCGAATCGAGTCCTCTCTACCACAC
                                                                                                                        GCTAAATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTAT
                                                                                                                                                                                        AGAAATTGAAAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTG
                                                                                                                                                                                                                                                        TATGGAGCCATTAAATGAAATTGGGAAAATGTAGATGAATAAATTTCTTCTATGTAGTTTA
                                                                                                                                                                                                                                                                                                                                                                      GTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCG
                                                                                                                                                                                                                                                                                                                                                                                                      GTATCTTCTCCGACGCGCTTATGAGAACCGGGGGAATGATGGCCACCGGAGCTCATGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                            GAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAA 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGCGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAA 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAA 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTCGCCAACACATAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAAGTCGCCAGTCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAGTCGCCAGTCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAGTTGGTGAGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCCTGGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CAAGTTGGTGAGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAATGCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAATGCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAAGACACTCCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAACTCAGAACCGGAACCGTTAACCGCGGAAGAAGAAAGGGAGCTCGAAGCAGCTCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ANACTCAGAACCGGAACCGTTAACCGCGGAAGAAGAAGGGAAGCTCGAAGCAGCTCATGG
                                                                                    GCTAAATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTAT
                                                                                                                                                          AGAAATTGAAAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTG
                                                                                                                                                                                                                                                                                                    CGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGAAGACACAATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1380
```

1800 1800 1680 1680 1620 1620 1560 1560 1500 1260

1200 1200 1140 1080 1080 1020

1020

960

960

900 840

" * * * * * * * * * * * * * * * * * * *	8 X R X G X	RESULT AAC4786 ID AA XX AC XX AC AC XX AC AC XX AC AC XX AC AC XX AC AC XX AC AC XX AC AC XX AC AC XX AC AC XX AC AC XX AC AC XX XX AC XX XX AC XX XX AC XX XX AC XX XX AC XX XX XX AC XX XX XX XX XX XX XX XX XX XX XX XX XX
25-FEB-2000; 2 25-FEB-1999; 09-MAR-1999; 09-MAR-1999; 23-MAR-1999; 16-APR-1999; 16-APR-1999; 16-APR-1999; 23-APR-1999; 23-APR-1999; 23-APR-1999; 23-APR-1999; 23-APR-1999; 23-APR-1999; 23-APR-1999; 23-APR-1999; 23-APR-1999; 24-MAY-1999; 24-	Arabidopsis tl EP1033405-A2. 06-SEP-2000.	2 (C47865 stan (C47865; 3-OCT-2000 cabidopsis t /bridisation comoter; ter
99US-0121825P 99US-0123348P 99US-0125788P 99US-0126785P 99US-0126785P 99US-0126785P 99US-012674P 99US-012674P 99US-0130047P 99US-0130047P 99US-0130040P 99US-0130040P 99US-01312048P 99US-01312048P 99US-0132048P 99US-0132048P 99US-0132048P 99US-0132048P 99US-0132048P 99US-0132048P 99US-0132048P 99US-0132048P 99US-0132048P 99US-0132048P 99US-0132049P 99US-013406P 99US-0136722P 99US-0136722P 99US-0136722P 99US-013694B 90US-013694P 90US-013694P 90US-013694P 90US-01604P 90US-	haliana.	dard; DNA; 1835 BP. (first entry) haliana DNA fragment SEQ ID NO: 55402. tassay; genetic mapping; gene expression control; ification; signal transduction pathway; metabolic pathway; mination sequence; ss.
\(\text{\text{R}}\) \(\text{R}\		***************************************
12-JUL-1999 13-JUL-1999 14-JUL-1999 15-JUL-1999 16-JUL-1999 19-JUL-1999 19-JUL-1999 19-JUL-1999 20-JUL-1999 21-JUL-1999 21-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 22-JUL-1999 23-JUL-1999 23-JUL-1999 24-JUL-1999 25-JUL-1999 26-JUL-1999 27-JUL-1999 28-JUL-1999 29-JUL	661	-JUN-199 -JUN-199 -JUN-199 -JUN-199 -JUN-199 -JUN-199 -JUN-199 -JUN-199 -JUN-199 -JUN-199 -JUN-199 -JUN-199
99US-0142920P 99US-0143542P 99US-0143624P 99US-0144005P 99US-01440331P 99US-0144331P 99US-0144332P 99US-0144332P 99US-01448184P 99US-0145086P 99US-0145086P 99US-0145088P 99US-0145145P 99US-014518P 99US-0145218P 99US-014638P 99US-0147303P 99US-0147303P 99US-014731P 99US-014731P 99US-014732P 99US-014732P 99US-014732P 99US-014732P 99US-0148319P 99US-0148319P 99US-0148319P 99US-014836P 99US-014836P 99US-014836P 99US-014836P 99US-014836P 99US-014836P 99US-014836P 99US-014836P 99US-014836P 99US-014836P 99US-014836P 99US-014836P 99US-014836P 99US-014836P	9US-0141287 9US-0141842 9US-0142154 9US-0142055 9US-0142390 9US-0142390	9US-0139458 9US-0139459 9US-0139461 9US-0139462 9US-0139462 9US-0139750 9US-01397750 9US-0139779 9US-0139819 9US-0140353 9US-0140353 9US-0140353 9US-0140353

hes 23; Inde archagcanacana, archagcanacanan archagcanacanan archagcanacanan acanancerregan acanaarcerregan acanaarcerregan acanaarcerraac	22-CCT-1999; 99US-0161404P. 25-CCT-1999; 99US-0161406P. 25-CCT-1999; 99US-0161406P. 26-CCT-1999; 99US-0161359P. 26-CCT-1999; 99US-0161360P. 26-CCT-1999; 99US-0161361P. 28-CCT-1999; 99US-0161361P. 28-CCT-1999; 99US-0161361P. 28-CCT-1999; 99US-0161932P. 28-CCT-1999; 99US-016193P. 28-CCT-1999; 99US-016193P. 28-CCT-1999; 99US-0162142P. 28-CCT-1999; 99US-0162142P.	14-OCT-1999; 99US-01 21-OCT-1999; 99US-01 21-OCT-1999; 99US-01 21-OCT-1999; 99US-01 21-OCT-1999; 99US-01 21-OCT-1999; 99US-01 21-OCT-1999; 99US-01 21-OCT-1999; 99US-01 22-OCT-1999; 99US-01 22-OCT-1999; 99US-01	05-0CT-1999; 99U 06-0CT-1999; 99U 07-0CT-1999; 99U 08-0CT-1999; 99U 13-0CT-1999; 99U 13-0CT-1999; 99U 13-0CT-1999; 99U 13-0CT-1999; 99U 14-0CT-1999; 99U 14-0CT-1999; 99U	10.5EP-1999 99US-01 11-5EP-1999 99US-01 15-5EP-1999 99US-01 16-5EP-1999 99US-01 20-5EP-1999 99US-01 22-5EP-1999 99US-01 23-5EP-1999 99US-01 24-5EP-1999 99US-01 24-5EP-1999 99US-01 26-5EP-1999 99US-01 28-5EP-1999 99US-01 29-5EP-1999 99US-01 29-5EP-1999 99US-01	2222222222222
## Gaps 1; Qy 1085 ####################################	Db 852 Qy 905 Db 912 Qy 965 Db 972 Db 972	Qy 725 CTI Db 732 CTI Qy 785 TCI Db 792 TCI QY 845 TCI	Qy 545 GTT Db 552 GTT Qy 605 GCT Db 612 GCT Qy 665 TTD Db 672 TTD	Qy 365 GCC Db 372 GCC Qy 425 TCT Db 432 TCT QY 485 TTT Db 492 TTT	
GÉTÉACAÁAGACCAACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGT 1091 GAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAAAATGTTCCTATGGGGTTCAAG 1144 [CTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTC 784	GTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGAC 604	CCCTCTTCCATCCGCCCCCCTGAAGATCCTATCGTCCGACCGCTGAGCGCCTGAGAAAGTACC 424	0-0 4-5

```
닭
                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                     뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                      8
25-EEB-1999

05-MAR-1999

09-MAR-1999

23-MAR-1999

25-MAR-1999

29-MAR-1999

01-APR-1999

06-APR-1999

16-APR-1999

16-APR-1999
                                                                                                                                                                                              Hybridisation assay; genetic mapping; gene expression control; protein identification; signal transduction pathway; metabolic pathway; promoter; termination sequence; ss.
                                                                                                                                                                                                                                      Arabidopsis thaliana DNA fragment SEQ ID NO: 33816.
                                                                                                                                                                                                                                                                               AAC41972;
                                                                                                                                                                                                                                                                                                    AAC41972 standard; DNA; 1844
                                                                                                                                  06-SEP-2000
                                                                                                                                                       EP1033405-A2
                                                                                                                                                                           Arabidopsis thaliana.
                                                                                                                                                                                                                                                           17-OCT-2000 (first entry)
                                                                                                                25-FEB-2000; 2000EP-00301439
                                                                                                                                                                                                                                                                                                                                                       1812
                                                                                                                                                                                                                                                                                                                                                                                              1752
                                                                                                                                                                                                                                                                                                                                                                                                                  1745
                                                                                                                                                                                                                                                                                                                                                                                                                                       1692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1265
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATTGATAAACAGAACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGG 1384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCT 1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAA 1564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTAT
                                                                                                                                                                                                                                                                                                                                                       ACCTTATCAATAAAAATGTTTTTT 1835
                                                                                                                                                                                                                                                                                                                                                                   ACCTTATCAATAAAAATGCTTTTT 1828
                                                                                                                                                                                                                                                                                                                                                                                                           AATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAAATGTATATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCATGAGGATGGAACTTAAGAGGAGATTAATCGCCGGGATTGCGTAAAGAGAGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCCACCGGAGCTCATGACCGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGATAGAGTTTGCACAGCTATATGGTATGTCGGATGCATTGTCCTTCGGTTTAAAGAGA
                                                                                                                                                                                                                                                                                                                                                                                             AATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTATATTC
                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTGAAAACAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTGGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTGAAAACAAAAAATTATTAAGAAATGGAGTAGGTAAGAACATTTCCCTGTGGCTA
99US-0121825P
99US-0123180P
99US-0123548P
99US-0125788P
99US-0126264P
99US-0126785P
99US-0127462P
99US-0127462P
99US-0128734P
99US-0128734P
99US-0128734P
                                                                                                                                                                                                                                                                                                     BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1444
                                                                                                                                                                                                                                                                                                                                                                                                 1811
                                                                                                                                                                                                                                                                                                                                                                                                                    1804
                                                                                                                                                                                                                                                                                                                                                                                                                                          1751
                                                                                                                                                                                                                                                                                                                                                                                                                                                             1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1511
     19 APR-1999
21 APR-1999
23 APR-1999
23 APR-1999
28 APR-1999
30 APR-1999
30 APR-1999
05 MAY-1999
06 MAY-1999
07 WAY-1999
11 MAY-1999
11 MAY-1999
14 MAY-1999
14 MAY-1999
                                                                                                                                                                                                                                                                                                                                    18 MAY-1999
19 MAY-1999
20 MAY-1999
21 MAY-1999
24 MAY-1999
25 MAY-1999
25 MAY-1999
26 MAY-1999
01 JUN-1999
01 JUN-1999
01 JUN-1999
01 JUN-1999
01 JUN-1999
10 JUN-1999
11 JUN-1999
11 JUN-1999
11 JUN-1999
11 JUN-1999
11 JUN-1999
118 JUN-1999
118 JUN-1999
118 JUN-1999
118 JUN-1999
118 JUN-1999
118 JUN-1999
118 JUN-1999
118 JUN-1999
118 JUN-1999
118 JUN-1999
             08-JUL-1999
12-JUL-1999
13-JUL-1999
13-JUL-1999
14-JUL-1999
16-JUL-1999
16-JUL-1999
16-JUL-1999
19-JUL-1999
19-JUL-1999
19-JUL-1999
19-JUL-1999
                                                                                                                                      18-JUN-1999
18-JUN-1999
18-JUN-1999
18-JUN-1999
22-JUN-1999
22-JUN-1999
23-JUN-1999
24-JUN-1999
24-JUN-1999
30-JUN-1999
30-JUN-1999
01-JUL-1999
01-JUL-1999
01-JUL-1999
                                                                                                                                                                                                                                                                                                       18-JUN-1999;
18-JUN-1999;
18-JUN-1999;
     99US 0131449P.
99US 013248FP.
99US 013248FP.
99US 013248FP.
99US 013248FP.
99US 013248FP.
99US 013248FP.
99US 0134756P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 0134721P.
99US 013945P.
99US 013945P.
99US 013945P.
99US 013945P.
99US 013945P.
99US 013945P.
99US 014948P.
99US 014948P.
99US 014948P.
99US 014948P.
99US 014948P.
99US 014948P.
99US 014948P.
99US 014948P.
99US 014948P.
99US 014948P.
99US 014948P.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014428PP.
99US 014433PP.
99US 014433PP.
99US 014433PP.
99US 014433PP.
99US 014433PP.
99US 014433PP.
99US 014433PP.
99US 014433PP.
99US 014433PP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0130077P.
99US-0130449P.
99US-0130510P.
```

19-UUI-1999
20-UUI-1999
20-UUI-1999
20-UUI-1999
21-UUI-1999
21-UUI-1999
21-UUI-1999
22-UUI-1999
22-UUI-1999
22-UUI-1999
22-UUI-1999
22-UUI-1999
22-UUI-1999
23-UUI-1999
23-UUI-1999
23-UUI-1999
23-UUI-1999
23-UUI-1999

27-JUL-1999 27-JUL-1999

```
99US-0144335P.
99US-014484P.
99US-0144884P.
99US-0145086P.
99US-014508P.
99US-014508P.
99US-014508P.
99US-014508P.
99US-0145145P.
99US-0145145P.
99US-0145145P.
99US-0145214P.
99US-0145218P.
99US-0145218P.
99US-0146386P.
99US-0146386P.
99US-0147038P.
99US-0147038P.
99US-0147038P.
99US-0147038P.
99US-0147038P.
99US-0147302P.
99US-014712P.
99US-014712P.
99US-014713P.
99US-014713P.
99US-014713P.
99US-014713P.
99US-014713P.
99US-014713P.
99US-014713P.
99US-014713P.
99US-0151303P.
99US-0151303P.
99US-0151303P.
99US-0151303P.
99US-0151303P.
99US-0151303P.
99US-0151303P.
99US-0151303P.
99US-0151303P.
99US-0151303P.
99US-0151303P.
99US-0151303P.
99US-0151303P.
99US-0151303P.
99US-0151303P.
99US-0152363P.
99US-0152363P.
99US-0152363P.
99US-0152363P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0152339P.
99US-0153339P.
99US-0153339P.
99US-0153239P.
99US-0153239P.
99US-0153239P.
                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                  뮍
                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                    뮍
                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                             뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                   Ś
                                                                                                                                        밁
                                                                                                                                                            S
                             δ
                                                        밁
                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14-0CT-1999
14-0CT-1999
14-0CT-1999
14-0CT-1999
18-0CT-1999
21-0CT-1999
21-0CT-1999
21-0CT-1999
21-0CT-1999
21-0CT-1999
21-0CT-1999
21-0CT-1999
22-0CT-1999
22-0CT-1999
25-0CT-1999
25-0CT-1999
25-0CT-1999
26-0CT-1999
26-0CT-1999
28-0CT-1999
28-0CT-1999
28-0CT-1999
28-0CT-1999
28-0CT-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1803;
                                                                                                                                                                                                                                                                                                                          192
                                                                                                                                                                                                                                                                                                                                                                     132
                                  605
                                                        552
                                                                                                                                                                                         372
                                                                                                                                                                                                              365
                                                                                                                                                                                                                                   312
                                                                                                                                                                                                                                                        305
                                                                                                                                                                                                                                                                             252
                                                                                                                                                                                                                                                                                                    245
                                                                                                                                                                                                                                                                                                                                               185
                                                                                                                                                                                                                                                                                                                                                                                           125
               612
                                                                              545
                                                                                                    492
                                                                                                                        485
                                                                                                                                               432
                                                                                                                                                                   425
                                                                                                                                                                                                                                                                                                                                                                                                                72
                                                                                                                                                                                                                                                                                                                                                                                                                                     წ
                                                                                                                                                                                                                                                                                                                                                                                                                                                          16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ຫ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                           AATTATTTTTTTTGTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTTATGGCAACCCGT
            gccererrecarecedecedecariaerccrarecreaccraeedacerecereareae
                                                                                                                                                                                                      GCCGTGTTGCATGCGGCGGCGGTAGGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGC
                                                                                                                                                                                                                                                  CTCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACC
                                                                                                                                                                                                                                                                             GCACCGGAACCACCTCTTCACCACCCAAAAACCCACTGAGCAATCTCACGATGGTCTCGAT
                                                                                                                                                                                                                                                                                         GCACCGGAACCACCTCTTCACCACCCAAAACCCACGAGCAATCTCACGATGGTCTCGAT
                                                                                                                                                                                                                                                                                                                                      CCTCCCACCGTGACTGCTTCCACCGCCGTCGTCGTCGGAGATTCTCTCCTTTGGACAACAA
                                                                                                                                                                                                                                                                                                                                                                                  CTTCTCCGAACAAACTTTATCCGGCGATCTTACCGTTTTACCCGCTTTTAGCCCGGTGGGT
                                                                                                               TTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGC
                                                                                                                                            TCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACG
                                                                                                                                                                                                                                   CTCTCCGATCAAGCCCGTCTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACC
                                                                                                                                                                                                                                                                                                                          CCTCCCACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAA
                                                                                                                                                                                                                                                                                                                                                                     CTTCTCCGAACAACTTTATCCGGCGATCTTACCGTTTACCCGCTTTTAGCCCGGTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                AATTTTTTTT
                                                                                                  rrrareaccarrrrececceergaaearecegacecaececreacecerraecer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   96.3%;
milarity 98.5%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99US-0159330P

99US-0159633P

99US-0159638P

99US-0160767P

99US-0160767P

99US-0160770P

99US-0160770P

99US-0160814P

99US-0160814P

99US-0160814P

99US-0160980P

99US-0161404P

99US-0161404P

99US-0161350P

99US-0161350P

99US-0161361P

99US-0161361P

99US-0161361P

99US-0161393P

99US-0161993P

99US-0161993P

99US-0161993P
                                                                                                                                                                                                                                                                                                                                                                                                                 TTTTTGTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 1764.8;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1844;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                        371
                                                                                                                                                                                                                                                             364
                                                                                                                                                                                                                                                                                 311
                                                                                                                                                                                                                                                                                                       304
                                                                                                                                                                                                                                                                                                                              251
                                                                                                                                                                                                                                                                                                                                                 244
                                                                                                                                                                                                                                                                                                                                                                        191
                                                                                                                                                                                                                                                                                                                                                                                              184
                                                                                                                                                                                                                                                                                                                                                                                                                  131
                                                                                                                                                                                                                                                                                                                                                                                                                                        124
                                                                                                                                                                                                                                                                                                                                                                                                                                                             71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64
                                       664
                                                                                                                                                                       484
                                                                                                                                                                                           431
                                                                                                                                                                                                                  424
                  671
                                                             611
                                                                                604
                                                                                                       551
                                                                                                                            544
                                                                                                                                                 491
```

20-AUG-1999 20-AUG-1999 23-AUG-1999 25-AUG-1999 26-AUG-1999 26-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 27-AUG-1999 28-SEP-1999 28-SEP-1999 28-SEP-1999 29-SE

27-JUL-1999
22-JUL-1999
02-AUG-1999
02-AUG-1999
02-AUG-1999
03-AUG-1999
04-AUG-1999
05-AUG-1999
05-AUG-1999
05-AUG-1999
06-AUG-1999
06-AUG-1999
10-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999
11-AUG-1999

us-10-026-767-3.rng

### STATE CONCRETE CONTRICT CO		10L	%C		process successions begins considered paramay, promoter; termination sequence; ss. Arabidopsis thaliana.	AA EP1033405-A2. KX ' CD 06-SEP-2000.	25-FEB-2000; 2	PR 23-FEB-11999; 99US-0123180P. PR 09-MAR-1999; 99US-0123180P. PR 23-MAR-1999; 99US-0125788P. PR 25-MAR-1999; 99US-0126264P.	29-MAR-1999; 01-APR-1999; 06-APR-1999; 08-APR-1999;	16-APR-1999; 19-APR-1999; 21-APR-1999; 23-APR-1999;	23-APR-1999; 28-APR-1999; 30-APR-1999; 30-APR-1999;	04-MAY-1999; 05-MAY-1999; 06-MAY-1999; 06-MAY-1999;	07-MAY-1999; 11-MAY-1999; 14-MAY-1999; 14-MAY-1999;	14-MAY-1999; 14-MAY-1999; 18-MAY-1999; 19-MAY-1999;	20-MAY-1999; 21-MAY-1999; 24-MAY-1999; 25-MAY-1999;	27,MAY-1999; 28-MAY-1999; 01-JUN-1999; 03-JUN-1999;	04-JUN-1999; 07-JUN-1999; 08-JUN-1999; 10-JUN-1999;	10-JUN-1999; 14-JUN-1999;
52 TINCCANGLIC CONTINGENTIAL CONTINGENTIAL CONTINGENTIAL CONTINUED		данха			4 % % () ;	с ш х ш .	χ μι χ i		·									
	FITACCAACATCTCACTTTAGCTCAGTGGTTGTGAACATAACTGCCATTTGTCCAATTAGT TTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGT TTACCAACATCTCCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGT CTTCTGAAACGAGTGAGGGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTC CTTCTGAAACGAGTGAGCGATCTGCTTCGGTGGGAATACAAAAGTCCGAACTTCAAACTC CTTCTGAAACGAGTGAGCGATCTGCTTCGGTGGGAATACAAAAGTCCCAAACTTCAAACTC	TCATGGAAGCTCAAATCGTTTCCCGAATCGAGACTCCTCTCTACCACACAACACAGAGCTCCTCTACCACACAGAGCTCTCTACCACACAGAGCTCAAACGTTTCCCGATTCCCGATTCGAGTCCTCTACCACAAACAGCTCAAATCGTTTCCTCCGATTCCGAGTCCTCTTACCACAAACAGCTCAAACAGCTCAAAACAGAAACAGAAAAAAAA	1 CAGARACCOGARACCOGGARGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAG	S ATTCAAGAATCTGTAGGAAATGCC-AAGAGTCCAATGTACCATTGTTGATTGATTGAGGA	964 AGACACAATCCTCCAACCGGGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAA	1024 IGCTGACAAAGACCGATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGG 	1084 TGAGAGACTGCATTTGGCAGTACAAATGCTGAGAAAGATGTTCCTATGGGGTTCAA	1092 TGAGAGACTGCATTTGGCAGTACAAATGCTGAGAAAGAATGGTTCCTATGGGGGTTGGAATTCCTGGGGTTGGAATGAGAAAGAGGGGATTCCTGGGTTGCAATGTCTAGCGAACGTAGCCTGGGGTTGCAATGTCTAGCGAAGCTTGGGAATGTCTAGCGAAGCTAGGGATTGCAATGTCTAGGGAAGCTAGCGAAGTTGCGGGATTGCAAAGTTGCAAAGTTGCAAAGTTGCAAAGTTGCAAAGTTGCAAAGTTGCAAAGTTGCAAAGTTGCAAAGTTGCAAAGTTGCAAAGTTGCAAAGTTGCAAAGTTGCAAAGTTGCAAAAGTTGCAAAAGTTGCAAAAGTTGCAAAAGTTGCAAAAAAAA	1204 GTCGCCAGTCCACGACACATTCAGGATACTCACTCTTGTTACAATGATGTATGACATT 1	1264 CCTGATGGAGAAGCATCAAACGGTTTCTGGTTTTCGCTGTCGTTCTCGCAACACATAACGC	1324 TGATTCGGGGAGACTTGCGTCGAGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGG 13 	1384 GAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAG 	1444 AGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTA 1	1504 TCTTCTCCGACGCCTAATGAGAACCGGGGAAATGATGGCCACCGGAGCTCATGACCGTCA 1	1564 ACTCATGAGGATGGAACTTAAGGGGGATTAATGGCGGGATTGCGTAAAGAGAGAG	1624 GGAGCCATTAAATGAAATTGGGAAATGTAGATGAATTAATT	1684 AATTGAAAAAAATTATAATATAGAAAATGGAGTAGGTAG	1744 AAATATTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTATATT

```
control;
metabolic pathway;
```

16-JUN-1999; 16-JUN-1999; 17-JUN-1999; 18-JUN-1999;

```
멁
                  Ś
                                       Query Match 95.9%;
Best Local Similarity 98.4%;
Matches 1797; Conservative
                                                                                                                                                                                                                                                                                                                                                                     28-SEP-1999;
29-SEP-1999;
04-OCT-1999;
05-OCT-1999;
06-OCT-1999;
07-OCT-1999;
08-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     22-SEP-1999;
23-SEP-1999;
24-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-AUG-1999;
31-AUG-1999;
01-SEP-1999;
07-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          12-AUG-
13-AUG-
13-AUG-
16-AUG-
17-AUG-
                                                                                                           22-OCT-1999;
25-OCT-1999;
25-OCT-1999;
25-OCT-1999;
26-OCT-1999;
26-OCT-1999;
26-OCT-1999;
26-OCT-1999;
                                                                                                                                                                                                                                                       13-OCT 1999;
13-OCT 1999;
13-OCT 1999;
14-OCT 1999;
14-OCT 1999;
14-OCT 1999;
14-OCT 1999;
14-OCT 1999;
14-OCT 1999;
14-OCT 1999;
18-OCT 1999;
21-OCT 1999;
                                                                                                                                                                                                                          21-OCT-1999;
21-OCT-1999;
21-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10-SEP-1999
13-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-SEP-1999
16-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-SEP-1999
  16
                     տ
99US-014834IP

99US-014868P,

99US-014936P,

99US-0149372P,

99US-0149930P,

99US-0150566P,

99US-0151066P,

99US-0151066P,

99US-0151066P,

99US-0151068P,

99US-0151303P,

99US-0151303P,

99US-0153738P,

99US-015373P,

99US-015473P,

99US-015473P,

99US-015473P,

99US-0155486P,

99US-0155488P,

99US-015753P,

99US-015753P,

99US-015753P,

99US-015753P,

99US-015833P,

99US-015953P,

99US-015953P,

99US-015953P,

99US-015953P,

99US-016076P,

99US-016076P,

99US-016076P,

99US-016076P,

99US-016076P,

99US-016076P,

99US-016076P,

99US-016076P,

99US-016076P,

99US-016135P,

99US-016076P,

99US-016135P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,

99US-016136P,
                                       ; Score 1757.6; pred. No. 0; 0; Mismatches
                                                               BG
                                          24;
                                                               u
T
                                           Indels
                                                              Length 1837;
                                           ۍ
۲:
                                          Gaps
```

99US-0139452P.
99US-0139454P.
99US-0139454P.
99US-0139454P.
99US-0139454P.
99US-0139461P.
99US-0139461P.
99US-0139461P.
99US-0139461P.
99US-0139461P.
99US-0139461P.
99US-0139461P.
99US-0139461P.
99US-0139461P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014961P.
99US-014591P.
99US-014591P.
99US-014591P.
99US-014638P.
99US-014591P.
99US-014638P.
99US-014638P.
99US-014638P.
99US-014638P.
99US-014638P.
99US-014638P.
99US-014638P.
99US-014638P.
99US-014638P.
99US-014638P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.
99US-014730P.

-1999

-1999 -1999 -1999

1999

JUL-1999

22-JUL-1999 22-JUL-1999 22-JUL-1999 23-JUL-1999 23-JUL-1999 23-JUL-1999 23-JUL-1999 24-JUL-1999 27-JUL-1999 27-JUL-1999 27-JUL-1999 27-JUL-1999 27-JUL-1999 27-JUL-1999 27-JUL-1999 28-JUL-1999 28-JUL-1999 28-JUL-1999 29-AUG-1999 02-AUG-1999 04-AUG-1999 05-AUG-1999 05-AUG-1999 06-AUG-1999 06-AUG-1999 06-AUG-1999 09-AUG-1999 09-AUG-1999 09-AUG-1999

2; 64 71

밁 S 덩 S

```
1032
                                                                                                                                                                                                                        1025
1145 TTGGTGAGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAG
                                                                                                                                                                                                                                                                             972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   252
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            132 CTTCTCCGAACAAACTTTATCCGGCGATCTTACCGTTTTACCCGCTTTTAGCCCGGTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125
                                                                                                                                                                                                                                                                                                                                965
                                                                                                                                                                                                                                                                                                                                                                                        912
                                                                                                                                                                                                                                                                                                                                                                                                                                             905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AATTTTTTTTTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTTATGGCAACCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                            CCTCCCACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCCTTTGGACAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTCTCCGAACAACTTTATCCGGCGATCTTACCGTTTTACCCGCTTTTAGCCCGGTGGGT
                                                                                                          GAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAG 1144
                                                                                                                                                                   GCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGT
                                                                                                                                                                                                                                                                                                                                   GACACAATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAAT 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TCATGGAAGCTCAAATCGTTTTCCGGTTTTCTCCGAATCGAGTCCTCTCTACCACACAAAC 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTC 784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTTGTCCAATTAGT 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGTATCTTGTGATGATAACATGCAACAATTCATTCGAACCATTGAAGCTGCCAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTGTATCTTGTGATGATAACATGCAACAATTCATTCGAACCATTGAAGCTGCCAAATCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTTATGAAGCTACCGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTAAACTTATGGACGCTTCCGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTAAACTTATGGACGCTTCGGTGAAAGCGCTGGCATGGTTTTAGGGCTTGTGAAAAGTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCGTGTTGCATGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCACCGGAACCACCTCTTCACCACCCAAAACCCACTGAGCAATCTCACGATGGTCTCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCACCGGAACCACCTCTTCACCACCCAAAACCCCACCGAGCAATCTCACGATGGTCTCGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CTTCCCACCGTGACTGCTTCCACCGCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATTATTTTTTTTTTTTGTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGT 124
                                                                                                                                                                                                                                                                                                                                                                                        TCAGAACCGGAACCGTTAACCGCGGAAGAAGAACGGGAGCTCGAAGCAGCTCATGGAAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCAGAACCGGAACCGTTAACCGCGGAAGAAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGG 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCATGGAAGCTCAAATCGTTTCCGGTTTTCTCCGATTCGAGTCCTCTCTACCACACAAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CTTCTGAAACGAGTGAGCGATCTGCTTCGGTGGGAATACAAAAGTCCAAACTTCAAACTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTTATGACCATTTTTGCGCCGGTGAAGATGCCAACGCAGCCGCTGAGCGCGTGAGAAGC
                                                     GAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAG
                                                                                                                                                                                                      GACACAATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAAT 1031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            131
                                                                                                                                                                      1091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    851
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            731
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         244
                                                        1151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 791
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       611
     1204
RRSULT 5
ARC50748
ARC50748
ARC50748
ARC50748
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
ARC5074
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
```

```
1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1152
                                                                                   1751
                                                                                                                                                                                                              1685
                                                                                                                                                                                                                                                         1631
                                                                                                                                                                                                                                                                                                  1625
                                                                                                                                                                                                                                                                                                                                           1571
                                                                                                                                                                                                                                                                                                                                                                                   1565
                                                                                                                                                                                                                                                                                                                                                                                                                              1511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1212
                        1805 ACCTTATCAATAAAAATGCTTTTTAC 1830
1811 ACCTTATCAATAAAATGTTTTTTAC
                                                                                                               GATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGG 1384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCGCCAGTCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTC 1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTGAAAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTGGCTA
                                                                                                                                                                                                                                                                                         GAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAA 1684
                                                                                                                                                                                                                                                                                                                                                                             GCCGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAGATAGAGTTTGCACAGCTATATGGTATGTCGGATGCATTGT-CTTCGGTTTAAAGAGA 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGA 1444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATTGATAAACAGAACGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACACATAACGCT 1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCGCCAGTCCACGACACTTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTC 1271
                                                                                 AATATTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTATATTC
                                                                                                                                                                                                       ATTGAAAACAAAAAATTATAATAATAAGAAAATGGAGTAAGGAACATTTCCTGTGGCTA 1744
                                                                                                                                                                                                                                                       GAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                              CTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCCACCGGAGCTCATGACCGTCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAA 1564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTAT 1504
                                                                                                                                                                                                                                                                                                                                             1836
                                                                                                                                                                                                                                                                                                                                               1630
                                                                                                                                                                                                                                                                                                                                                                                                                                   1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1510
                                                                                        1810
                                                                                                                                 1804
                                                                                                                                                                          1750
                                                                                                                                                                                                                                                             1690
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1331
```

Ś

Ś 밁

Ś 밁

밁

Ś 밁 ş 멼 Ş 밁 Ś 밁 Ś 밁 Ś 뮹 Ś 밁 Ś 망 Ś 밁 Ś

맑

AAC50748 standard; DNA; 1687 ВP

18-OCT-2000 (first entry)

Arabidopsis thaliana DNA fragment SEQ ID NO: 65990.

Hybridisation assay; genetic mapping; gene expression control; protein identification; signal transduction pathway; metabolic pathway; promoter; termination sequence; ss.

Arabidopsis thaliana.

EP1033405-A2

06-SEP-2000

25-FEB-2000; 2000EP-00301439

25-FEB-1999; 05-MAR-1999; 09-MAR-1999; 99US-0121825P. 99US-0123180P. 99US-0123548P.

밁 S 밁 Ş 밁 Ś

S

						ים ים	טי טי	1 111 11	יטיי	טי טי	יט יט	20 3	22:	יַ יַיַ יַ	1 111 11												** ***	יטי	יטינ	PR	m) 10	י טי ס	n m
PR PR PR	PR PR	PR	PR	£ & 6	žž	×π	70 70	'nχ	Ď;Ö	zo zo	XÌ XÌ	70 X	0 ,0 ,	0 20 2	žχ	2 2 2	אַקי	22 22	PR	3 5	מקים מקים	2 2	88	PR	א נא	3 %	ž	××	; to ;	טק טק	ж ў ;	ל טל ט	ชัฆั
1120	0 N H H	, 0, 6, 6	بهرسر	າ ເາ ⊢	• 05 05	88	1 1	1 1	18-	18-	7 1	16-		100	7-4	·ωF	00 -	4.01	20-	φα	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		44	06-I	06-	4.6	9 9	œυ	231	- 9		06-1	29-1
i i i i i i i i i i i i i i i i i i i	ដុំផ្គុំផ្គុំ		2 N N N N N N N N N N N N N N N N N N N		ĔĔ	ăă	JUN-	ğ								, ,	MAY-	-MAY-1	MAY-1	MAY-	MAY-	MAY-1	MAY-1	MAY-	MAY-	YAY-	, ,	, ,	٠	''.	. '	٠'n,	MAR-1
1999	1999; 1999; 1999;	1999;	1999;	1999; 1999;	1999;	1999;	1999;	1999;	1999;	; 666T	1999;	1999;	1999;	1999;	1999;	1999;	1,666	1,6661	1999;	666	1999;	999;	, 6667	, 666 1	1,666	999	. 666	,666	,666	999;	999	000	9999
00000			y yo	שפפ	ى م	99	99	9 00 0	9	9 9	9 9	9 4	p	p vo v	9 09 0	9 9 9	9 9	9 9	9 9	9 4	9 9 9	9 9	9 9	9 9	99	o vo v	o vo	yo u	9 49 4	99	9 1	ם סיסי	90
-5066 -5066 -5066																																	
.0142803P. .0142920P. .0142977P. .0143542P.	1418)1421)1420)1423	1408	1403	1398	1397	1394	1394	1394	13949	13945	13949	13945	1391	13854	13772	13752	13676	13562	13512	13494	13437	13421	13425 13421	13248 13286	13248	13248	13204 13240	13144	13051	13007 13044	12984	12823	12678 12746
03P. 20P. 77P. 42P.	554P.	91 P. 87 P.	957	7997	50p.	63P.	61P.	997	57P.	56P.	92P.	539.	19P.	100	244	2007	329.	29P.	53P.	117.	705	9.6	. 48 49 19	37P.	36P.	4.0	18P.	99.	9	7P.	5	יסיט יסיט	9 9
																																	-
														-																			
אק אק אק קק אק קק	78 78 89 89	PR PR PR	אק אק	77. 7.79 7.79	אי פס	PR	אָרָ קר	57. 77. 80.	PR.	- PR	PR PR	. לי נו	70 X X		ָּרָ טְּיִּ גָּיִלָּיִי גִּיִּרָּטִיִּ	ָּלְקָּ קַּקָּ	7 P P P P P P P P P P P P P P P P P P P	אין מין	P K	איני גריי	ָּרָיִם טּיִרָּ : געיי	PR	PR	מי עי	PR	ਸ਼ਤ	PR	ָרָיָּ אָרָיִ	א קים א קים	אק	PR	ਸ਼ਟ	PR PR
20000	2224	א לו לי ר ד ל ל ל ר	:00	ωω. 100	3 N N) N N	224	226			165	: :::	PR 11-		200	200	0 O C	000	027	200	221	226	223	22	22	222	21.	22.5	220	20-	19	19-	19-
24-SEP- 28-SEP- 29-SEP- 04-OCT-	20-SEP- 23-SEP- 23-SEP-	15-889-	01-SEP-	30-AUG- 31-AUG-	3 N N	25-AUG	23-AUG	20-AUG	20-AUG	18-AUG	16-AUG	13-AUG	11-AUG	09-AUG	06-AUG	05-AUG	04-AUG	03-AUG	02-AUG	28-JUL	27-JUL	26-JUL	23 - JUL 23 - JUL	22-JUL 23-JUL	22-JUL	22-JUL	21-JUL	21-501	220	20-	19	19-JUL- 19-JUL-	19-JUL-
24-SEP-19 28-SEP-19 29-SEP-19 04-OCT-19	20-SEP-19 22-SEP-19 23-SEP-19	13-SEP-19	01-SEP-19	30-AUG-19	27-AUG-19: 27-AUG-19:	25-AUG-199	23-AUG-19	20-AUG-19	20-AUG-199	18-AUG-199	16-AUG-199	13-AUG-199	11-AUG-199	09-AUG-1999 10-AUG-1999	06-AUG-1999	05-AUG-1999	04-AUG-199	02-AUG-1999 03-AUG-1999	02-AUG-199	28-JUL-199	27-JUL-199	26-JUL-199	23-JUL-199	22-JUL-199	22-JUL-199	22-JUL-199	21-JUL-199	21-JUL-199	20-JUL-199	19-JUL-199 20-JUL-199	19-JUL-199	19-JUL-199	19-JUL-199 19-JUL-199
24-SEP-1999; 28-SEP-1999; 29-SEP-1999; 04-OCT-1999;	20-SEP-1999; 22-SEP-1999; 22-SEP-1999; 23-SEP-1999;	13-SEP-1999; 15-SEP-1999;	01-SEP-1999; 07-SEP-1999;	30-AUG-1999; 31-AUG-1999;	27-AUG-1999; 27-AUG-1999; 27-AUG-1999;	25-AUG-1999; 26-AUG-1999;	23-AUG-1999;	20-AUG-1999;	20-AUG-1999; 20-AUG-1999;	18-AUG-1999;	16-AUG-1999;	13-AUG-1999;	11-AUG-1999; 12-AUG-1999;	09-AUG-1999; 10-AUG-1999;	06-AUG-1999;	05-AUG-1999;	04-AUG-1999;	02-AUG-1999; 03-AUG-1999; 04-NUG-1999;	02-AUG-1999; 02-AUG-1999;	28-JUL-1999;	27-JUL-1999;	26-JUL-1999; 27-JUL-1999;	23-JUL-1999; 23-JUL-1999;	22-JUL-1999; 23-JUL-1999;	22-JUL-1999;	22-JUL-1999;	21-JUL-1999;	21-JUL-1999;	20-JUL-1999;	19-JUL-1999; 20-JUL-1999;	19-JUL-1999;	19-JUL-1999;	19-JUL-1999; 19-JUL-1999;
24-SEP-1999; 99US- 28-SEP-1999; 99US- 29-SEP-1999; 99US- 04-OCT-1999; 99US-	20-SEP-1999; 99US- 22-SEP-1999; 99US- 23-SEP-1999; 99US-	13-SEP-1999; 99US- 15-SEP-1999; 99US-	01-SEP-1999; 99US-	30-AUG-1999; 99US- 31-AUG-1999; 99US-	27-AUG-1999; 99US- 27-AUG-1999; 99US- 27-AUG-1999: 99US-	25-AUG-1999; 99US- 26-AUG-1999; 99US-	23-AUG-1999; 99US-	20-AUG-1999; 99US-	20-AUG-1999; 99US- 20-AUG-1999; 99US-	18-AUG-1999; 99US-	16-AUG-1999; 99US-	13-AUG-1999; 99US-	11-AUG-1999; 99US- 12-AUG-1999; 99US-	09-AUG-1999; 99US- 10-AUG-1999; 99US-	06-AUG-1999; 99US-	05-AUG-1999; 99US-	04-AUG-1999; 99US-	02-AUG-1999; 99US- 03-AUG-1999; 99US-	02-AUG-1999; 99US- 02-AUG-1999; 99US-	28-JUL-1999; 99US-	27-JUL-1999; 99US-	26-JUL-1999; 99US-	23-JUL-1999; 99US- 23-JUL-1999; 99US-	22-JUL-1999; 99US- 23-JUL-1999; 99US-	22-JUL-1999; 99US-	22-JUL-1999; 99US-	21-JUL-1999; 99US-	21-JUL-1999; 99US-	20-JUL-1999; 99US-	19-JUL-1999; 99US- 20-JUL-1999; 99US-	19-JUL-1999; 99US-	19-JUL-1999; 99US- 19-JUL-1999; 99US-	19-JUL-1999; 99US-
PR 24-SEP-1999; 99US-0155659P PR 28-SEP-1999; 99US-0156458P PR 29-SEP-1999; 99US-0156596P PR 04-OCT-1999; 99US-0157713P PR 05-OCT-1999; 99US-0157753P	20-SEP-1999; 99US- 22-SEP-1999; 99US- 23-SEP-1999; 99US-	13-SEP-1999; 99US- 15-SEP-1999; 99US-	01-SEP-1999; 99US-	30-AUG-1999; 99US- 31-AUG-1999; 99US-	27-AUG-1999; 99US- 27-AUG-1999; 99US- 27-AUG-1999: 99US-	25-AUG-1999; 99US- 26-AUG-1999; 99US-	23-AUG-1999; 99US-	20-AUG-1999; 99US-	20-AUG-1999; 99US- 20-AUG-1999; 99US-	18-AUG-1999; 99US-	16-AUG-1999; 99US-	13-AUG-1999; 99US-	11-AUG-1999; 99US- 12-AUG-1999; 99US-	09-AUG-1999; 99US- 10-AUG-1999; 99US-	06-AUG-1999; 99US-	05-AUG-1999; 99US-	04-AUG-1999; 99US-	02-AUG-1999; 99US- 03-AUG-1999; 99US-	02-AUG-1999; 99US- 02-AUG-1999; 99US-	28-JUL-1999; 99US-	27-JUL-1999; 99US-	26-JUL-1999; 99US-	23-JUL-1999; 99US- 23-JUL-1999; 99US-	22-JUL-1999; 99US- 23-JUL-1999; 99US-	22-JUL-1999; 99US-	22-JUL-1999; 99US-	21-JUL-1999; 99US-	21-JUL-1999; 99US-	20-JUL-1999; 99US-	19-JUL-1999; 99US- 20-JUL-1999; 99US-	19-JUL-1999; 99US-	19-JUL-1999; 99US- 19-JUL-1999; 99US-	19-JUL-1999; 99US-

Qy 450 CGCGT Db 301 CGCGT Qy 510 AAGAT Qy 570 GGATG Qy 570 GGATG Qy 570 GGATG Qy 670 GGATG Db 421 GGATG Db 421 GGATG Db 421 GAATG Db 421 GAATG Db 421 GAATG Db 421 GAATG	270 CAA 	Query Match Best Local Simila Matches 1682; Cd Qy 150 GATC; Db 1 GATC; Qy 210 CCGTd Qy 210 CCGTd Db 61 CCGTd	PR 07-0CT-1999; PR 08-0CT-1999; PR 13-0CT-1999; PR 13-0CT-1999; PR 14-0CT-1999; PR 14-0CT-1999; PR 14-0CT-1999; PR 14-0CT-1999; PR 14-0CT-1999; PR 21-0CT-1999; PR 21-0CT-1999; PR 21-0CT-1999; PR 21-0CT-1999; PR 21-0CT-1999; PR 21-0CT-1999; PR 21-0CT-1999; PR 21-0CT-1999; PR 21-0CT-1999; PR 22-0CT-1999; PR 25-0CT-1999; PR 25-0CT-1999; PR 25-0CT-1999; PR 26-0CT-1999; PR 26-0CT-1999; PR 28-0CT-1999; PR ---	---	---	---
GTGAAGA	CCCACCGAGCAAT	91.7%; Scimilarity 99.9%; Pr.; Conservative 0; GATCTTACCGTTTACCGCTTT GATCTTACCGTTTTCCCGGAGATTCTCTCCCGGGGGGAGATTCTCTCCCGGGGGGGG	99US-0158029P 99US-0158232P 99US-0159293P 99US-0159293P 99US-0159293P 99US-0159233P 99US-0159331P 99US-0159638P 99US-0159638P 99US-0160741P 99US-0160768P 99US-0160768P 99US-0160768P 99US-0160814P 99US-0160814P 99US-01610814P 99US-0161406P 99US-0161406P 99US-0161361P 99US-0161361P 99US-0161361P 99US-0161361P 99US-0161361P 99US-0161922P 99US-0161922P 99US-0161922P 99US-0161922P 99US-0161922P 99US-0161922P			
GGTTTTAGGGCTTGTGAAAGTAGGTTTATGACCATTTTTGCGCGGTGTTTTAGGGCTTTTAGGGCTTTTAGGGCCGGTGTTTATTAGGGCTTTTTTTGCGCCGGTGTTTTTTTGGGCCGGTGTTTTTT	CTCACGATGGTCTCGATCTAGG	ore 1680.8; I				
GHAGGTTTTATGACCATTTTTGCGCCGGT	10000000000000000000000000000000000000	h 1687; o; acrecri acrecri				
GECCGGTG 509	TTTCT 32 TTTCT 18 TTTCT 18 SATAG 38 SATAG 24 SGTGA 44	Gaps 0; TCCACCG 209 TCCACCG 60 CACCACC 269 CACCACC 120 CACCACC 120				
8 8 8 8 8 8 8	S B S B S B S	B & B & B &	5			
381 590 650 501 710 561	1350 AAGCGAGI 1201 AAGCGAGI 1201 AAGCGAGI 1410 GTATGTCA 1470 TGCCGTTT 1321 TGCCGTTT 1321 TGCCGTTT	30 30 90 90	541 750 810 861 870 877 877 877 877 877 877 877 877 877			
	GACCICGGGAICGATA GALLILILILILILILILILILILILILILILILILILIL	AGCTTGCGCAATGATTQ TCTTGTTACAATGATTQ TCTTGTTACAATGATTQ TCTTGTTACAATGATTQ TCTTGTTACAATGATTQ TGTTGTTACAATGATTQ TGTTGTTACAATGATTQ TGTTGTTCTCGCAAQ				
ANGAGGETAACTCARC ANGAGGAGTATGGAGCG	AACAGAACGGGAAGJ	TACATAACGCTGATTC				
		6—6 6—6 8—				
GGGGAATGATGCCCCCCCGAAGCCCCATGACCCGTCAACTCATGAGGATGGAACTTAAAAAAATTATATATA	AAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATG	GUGAAGCTAGOTTGGCGAATTGCCTGGGTTGCAAGTCGAGAAAGCATCAAACGGTT ATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGAGAAAGCATCAAACGGTT	TGGTTGTAAAGTTACTGCGAACTTGTCAAACTCTCATGAAACGAATCGAATCGAATCGAATCGGAATCGAAACGAATCGAAACGAATCGAAACGAATCGAAACGAATCGAAACGAATCGAAACGAAACCAAAACCACAAAACACCAAAACACCAAAACACCAAACCAAACAC			

```
ARBSULT 6
ADA6A
XX ADA6
XX ADA6
XX ADA6
XX AC ADA6
XX ADA6
XX AC ADA6
XX AC ADA6
XX AC ADA6
XX AC ADA6
XX AC ADA6
XX AC AC AC AC AC
XX AC AC AC
XX AC AC AC
XX AC AC
XX AC AC
XX AC AC
XX AC AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC
XX AC

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                밁
S
                                            В
                                                                              Ś
                                                                                                                                     片
                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Chang H,
Katagiri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present invention relates to a method (M1) for identifying genes involved in plant resistance or response to pathogenic infection. M1 comprises identifying a gene whose expression is significantly altered in the incompatible interaction of plant gene expression relative to expression of the gene in an uninfected plant, in a mutant plant that does not express a gene associated with response to pathogenic infection, or in a corresponding incompatible or compatible interaction. (M1) is useful for conferring resistance to resistance or tolerance to a plant to bacterial, fungal or viral infection. The present sequence was used to illustrate the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Identifying at least one gene involved in plant resistance or response to pathogenic infection for conferring resistance or tolerance to a plant to bacterial, fungal or viral infection by determining or detecting plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 6; SEQ ID NO 362; 899pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2003-175290/17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    22-JUN-2001; 2001WO-IB001105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22-JUN-2001; 2001WO-IB001105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO2003000898-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Plant; bacterial infection; fungal infection; viral infection; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Arabidopsis thaliana gene, SEQ ID 362.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADA68100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADA68100 standard; DNA; 1500
                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 1500 BP; 383 A; 374 C; 371 G; 372 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (SYGN ) SYNGENTA PARTICIPATIONS AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   illustrate the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     expression.
                                                                                                                                                                                                                                                                                                                         1494;
                                                                                                                                                                                                                                                                               113
                                                                                                                                                                                   173 AGCCCGGTGGGTCCTCCCACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCC 232
                                                                                                                                       61
                                                                                                                                                                                                                                ۳
                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                  ATGGCAACCCGTCTTCTCCGAACAAACTTTATCCGGCGATCTTACCGGTTTACCCGCTTTT
GATGGTCTCGATCTCCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTC 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTTT 1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTTT 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTTACTATCAATATCATTCACAAATGTATATTCACCTTATCAATAAAAATGCTTTTTA 1680
                                                                                                                                                                                                                                ATGGCAACCCGTCTTCTCCGAACAAACTTTATCCGGCGATCTTACCGGTTTTACCCGCTTTT 60
                                                                                      TTTGGACAACAAGCACCGGAACCACCTCTTCACCACCCAAAACCCACCGAGCAATCTCAC 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chen W,
                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Quan S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cooper B,
S, Tao Y,
                                                                                                                                                                                                                                                                                                                                               81.3%;
99.6%;
                                                                                                                                                                                                                                                                                                                           0,
                                                                                                                                                                                                                                                                                                                                               Score 1490.4; DB 7;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Glazebrook J, Whitham S, Xie
                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Goff SA,
ie Z, Zhu
                                                                                                                                                                                                                                                                                                                           σ.
                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                       Length 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hou
                                                                                                                                                                                                                                                                                                                           <u>.</u>
                                                                                                                                          120
                                                                                                                                                                                                                                                                                                                           0
                                                                                                                                                                  밁
                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                      뮍
                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ફ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                        Ś
                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                            F
                                                                                                                                                                  1141
                                                                                                                                                                                                               1253
                                                                                                                                                                                                                                                        1081
                                                                                                                                                                                                                                                                                                     1193
                                                                                                                                                                                                                                                                                                                                                    1021
                                                                                                                                                                                                                                                                                                                                                                                                1133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1013
                        1373 AAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1073 AGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAGAATGTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                841 ATTGATGCGGAAGACACAATCCTCCAACCCGGGATCGATTACATGGCTTATTCATCGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       713
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GATGGTCTCGATCTCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGCCAAGAGTCCAATGTACCATTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACCACACAAACTCAGAACCGGAACCGTTAACCGGGAAGAAGAAGAAAGGGAGCTCGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACG 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATCATGTTCAATGCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATCATGTTCAATGCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTGATGCGGAAGACACAATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGCCAAGAGTCCAATGTACCATTGTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCCGGTTTTCTCCGAATCGAGTCCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AACTTCAAACTCTCATGGAAGCTCAAATCGTTTTCCGGTTTTTCTCCGAATCGAGTCCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAAAGGGATGCTTGTCTATGGCGTCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTGAAAAGTACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGAAAAGTACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTTAGGGCTT 472
                                                                                                                                                                                                TGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTTCGGTGTCGTTCTCGCA
                                                                                                                                                                                                                                                        ATGGGGTTCAAGTTGGTGAGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAGACGCCGGTGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TACCACACAACTCAGAACCGGAACCGTTAACCGGGAAGAAGAAAGGGAGCTCGAAGCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCG
                                                                                                                      ACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGAT
                                                                       ACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAAAGCGAGTGACCTCGGGATCGAT
                                                                                                                                                                     1200
                                                                                                                                                                                                                                                                                                          1252
                                                                                                                        1372
                                                                                                                                                                                                                                                                                                                                                         1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           300
                                                                              1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                652
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       420
```

```
RESULT 7
ARBZ13606
ID ARZ13606
ID ARZ13606
ID ARZ1
AC ARZ1
AC ARZ1
AC ARZ1
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Aral
XX Col
Ph 24-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 26-1
PR 2
밁
                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                  Matches
                                                                                                                     Query Match
Best Local &
                                                                                                                                                                                                                                     The invention relates to identifying a stress condition to which a plant cell has been exposed, comprising: (a) contacting nucleic acid representative of expressed polynucleotides in the plant cell with an array or probes representative of the plant cell genome; and (b) detecting a profile of expressed polynucleotides in the plant cell characteristic of a stress response. The method is useful in the production of transgenic plants, cells and seeds and in producing plants with increased tolerance to abiotic stress. The present sequence is that of an Arabidopsis thaliana stress regulated gene (ABZ12196-ABZ17574) used in methods of the invention. Note: The sequence data for this pattent is not represented in the printed specification but is based on sequence information supplied to Derwent by the European Patent Office
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  24-AUG-2000; 2000US-0227866P.
26-JAN-2001; 2001US-0264647P.
22-JUN-2001; 2001US-0300111P.
                                                                                                                                                                                               Sequence 1461 BP; 371 A; 363 C; 365 G; 362 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 144; SEQ ID NO 1411; 577pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Identifying a stress condition to which a plant cell has been exposed producing plants with increased tolerance to these abiotic stresses.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2002-304127/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       24-AUG-2001; 2001WO-US026685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200216655-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arabidopsis thaliana; plant; gene; stress; transgenic; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Arabidopsis thaliana stress regulated gene SEQ ID NO 1411.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               21-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABZ13606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ABZ13606 standard; DNA; 1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1441 CATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGATTAATCGCCGGGATTGCGTAA 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1261 AAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTC 1320
                                                                                               1459;
                                               152
μ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SCRIPPS RES INST.
SYNGENTA PARTICIPATIONS AG.
                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGCCCACCGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCCACCGGAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACC
                               TCTTACCGTTTACCCGCTTTTAGCCCGGTGGGTCCTCCCACCGTGACTGCTTCCACCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGATTAATCGCCGGGATTGCGTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACC
  TCTTACCGTTTACCCGCTTTTAGCCCGGTGGGTCCTCCCACCGTGACTGCTTCCACCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kreps J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                               79.5%; Score 1457.8; 99.9%; Pred. No. 0; tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Wang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7
                                                                                                                                               DB 6;
                                                                                               5
                                                                                                                                               Length 1461;
                                                                                               0,
                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1380
  60
                                               211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1552
                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                  Ś
                                                                                                                          밁
                                                                                                                                                                          ş
                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                             맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                             1052
                                                                                                                                                                                                                                                                                                                             901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      212
                                                                                                                                                                                                                             961
                                                                                                                                                                                                                                                                                                                                                                                                                               841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    812
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  752
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61
                          ACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCT 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGAATTCAAGAAATCTGTAGGAAATGCCAA 931
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGT 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACCGGAACCACCTCTTCACCACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACCGGAACCACCTCTTCACCCA
                                                                       ACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCT 1291
                                                                                                                                                                       GAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACAATTCAGGAT 1231
                                                                                                                                                                                                                                                       GCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGCTTACATGTCTAGC 1171
                                                                                                                                                                                                                                                                                                                             ÁACACGATTCAGGCGTÁCTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAAT 960
                                                                                                                                                                                                                                                                                                                                                                             AACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAAT 1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAAGAAAGGGAGCTCGAAGCACCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCTCCGAATCGAGTCCTCTACCACACACACACACGGAACCGGAACCGTTAACCGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTCTCCGAATCGAGTCCTCTCTACCACACACACACCGGAACCGGAACCGTTAACCGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAAGGG 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTATGACCATTTTTTGCGCCGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTATGACCATTTTTGCGCCGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCTATGGTCGACCTAGGGACGTGGGGTCATGAGCTCTAAACCTTATGGACGCCTTCGGTGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAACCCACCGAGCAATCTCACGATGGTCTCGGATCTCTCCGATCAAGCCCGTCTTTTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AMACCCACCGAGCAATCTCACGATGGTCTCGATCTCCCGATCAAGCCCGTCTTTTCTCC 331
                                                                                                                                                                                                                          GCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGTCTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGTGGGAATACAAAAGTCCGAACTTCAAAACTCTCATGGAAGCTCAAATCGTTTCCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         271
                                                                                                                                                                                                                                                                                                                                                                                                                                  900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               360
                                                                                                                                                                                                                               1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
Gorlach J,
Rameaka JG,
Garcia CA,
Hurban P;
                                                                                                                                                                                                                                                                                                                                                                                                           Arabidopsis thaliana.
                                                                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana; plant; insecticide; fungicide; transgenic; stress; disease; crop; thale cress; tolerance factor; insect; pathogen;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Arabidopsis thaliana expressed polynucleotide SEQ ID NO 11.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABN98243 standard; DNA; 1339 BP
                                                                                                                                                                                                                                                                                                                                   26-JAN-2001; 2001US-00770445.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-AUG-2002 (first entry)
                                                                                                                       (GARC/)
                                                                                                                                                                                                                                                                                                          27-JAN-2000; 2000US-0178472P
                                                                                                                                                 (SEAH)
                                                                                                                                                                                                                                                           HAMI/)
                                                                                                                                                                                                                                                                          YYYA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1141 GGTTTCGGTGTCGTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAA 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1201
                                                                                 PAGE A.
MATHEW A V.
LEDFORD B L.
WOESSNER J P.
HAAS W D.
GARCIA C A.
KRICKER M.
SLATER T.
DAVIS K R.
ALLEN K.
                                                                                                                                                                                                                                                                                   GORLACH J.
                                                             HURBAN P.
                                                                                                                                                                                                                                                          HAMILTON C M.
                                                                         HOFFMAN N.
                                                                                                                                                                                                           RAMEAKA J G.
                                                                                                                                                                                                                         z
E
                                                                                                                                                                                                                                    RAINES T M.
                                                                                                                                                                                                                                               PRICE J L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTAATCGCCGGGATTGCGTAA 1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGA 1591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGT 1411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAA 1351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTAATCGCCGGGATTGCGTAA 1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGA 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGG 1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGT
           An Y, Hamilton CM,
Page A, Mathew AV,
Kricker M, Slater T,
           Price JL, Raines TM,
Ledford BL, Woessne,
Davis KR, Allen K,
           ines TM, Yu Y;
Woessner JP, Haas
Allen K, Hoffman N;
                       Haas WD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1260
```

```
WPI; 2002-403163/43
```

New Arabidopsis thaliana nucleic acid for identifying homologous genes, producing compositions that modulate the expression or function of its encoded protein, and mapping functional regions of protein.

Claim 1; SEQ ID NO 11; 49pp + Sequence Listing; English.

CC comprising a sequence capable of hybridising under stringent conditions
CC to a sequence selected from any one of 999 sequences (ABN99231-ABN99231),
CC given in the specification or its fragment. A polypeptide (II) encoded by
CC (II), a transgenic plant (III) comprising an exogenous nucleic acid or a
CC genetically modified cell (IV) comprising an exogenous nucleic acid or a
CC cuseful for screening a candidate agent for its biological effect. (I) is
CC cuseful for screening a candidate agent for its biological effect. (I) is
CC compositions that modulate the expression or function of its encoded
CC protein, mapping functional regions of the protein and in studying
CC associated physiological pathways. (I) is also useful for the genetic
CC manipulation of cells, particularly plant cells. (I) is also useful in
CC screening assays of various plant strains to determine the strains that
CC agents, e.g. fungicides, insecticides, etc., for elucidating biochemical
CC pathways. The screened agents are useful in improved methods of treating
CC crops to prevent or treat disease. (II) are also useful in screening
CC programs to identify agents that minic or enhance the tracticides of treating crops to
CC enhance their tolerance to environmental stress. (I) is also useful for
CC companies that tolerance to environmental stress. (I) is also useful for
CC companies that tolerance to environmental stress. (I) is also useful for
CC enhance their tolerance to environmental stress. (I) is also useful for
CC any specific insect and/or pathogen is responsible for damage to a
CC apriticular plant, for identifying other mediators that may induce
CC obsynthetic pathways of nutritional, commercial, or medicinal
CC value. (IV) is useful in the study of genetic function and regilation,
CC for identifying productions of nutritional, commercial or medicinal
CC value. (IV) is useful in the study of genetic function and regilation.
CC for identifying characterial stress for identifying care gene or gene products
CC has been considered as at seqdata.uspto.gov/sequence.html?DocID=999909770445 The invention relates to an Arabidopsis thaliana nucleic acid (I)

Sequence 1339 BP; 360 A; 280 C; 352 G; 327 T; 0 U; 20 Other;

밁 S 맑 S 문 Ś 밁 Ś 맑 Matches 1295; Query Match Best Local Similarity 411 181 121 471 351 TCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGA 410 651 AAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCA 710 1 TCGAGCGGCCCCGGGCAGGTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGA AGCGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAAGGGGATGCTTGTCTATGGCGTCG CGTGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTTAGGGC 470 AACACGCCGATGACGCTGTATCTTGTGATGATAACATGCAACAATTTATTCGAACCATTG AGCGCGTGAGAAGCGTTTATGAGGCTACGGGTCTTAAAGGGGATGCTTGTCTATGGCGTCG TTGTGAAAAGTACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTG TTGTGAAAAGTACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTG 530 CGTGGGTCATGAGCTCTAAACTTATGGACGCTTCCGTGACGCGTGGCATGGTTTTAGGGC 120 Conservative 69.9%; 0 Score 1280.6; DB 6; Length 1339; Pred. No. 0; Mismatches 44; Indels 0 Gaps 650 240 180 60 590

Ś

밁 S 밁 Ś 밁 S

밁

Ś B á 밁

밁

```
1131
1321
                                                                                                                                                                                                                                                                    1141
                                                                                                                                                                                                                                                                                                                                                            1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      891
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTATGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAAGAGAAATGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGATCATGTTCAATGCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCGGGTTTTCTCCGAATCGAGTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTC
ATGTAGTTTAAGAAATTGA 1339
                                     ATGTAGTTTAAGAAATTGA 1689
                                                                                                                                  AMAGAGAGAGTATGGAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCT
                                                                                                                                                                            CTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGATTAATCGCCGGGATTGCGT
                                                                                                                                                                                                           CTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGGAGATTAATCGCCGGGATTGCGT
                                                                                                                                                                                                                                                                      CCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAG
                                                                                                                                                                                                                                                                                                            CCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAG
                                                                                                                                                                                                                                                                                                                                                            NCGNNNTNNNGAGAGCANNNNNAATGTNAGCAAGTACATGNNGTTTGGACCCGTCGCAA
                                                                                                                                                                                                                                                                                                                                                                                                      TCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCGGATGCATTGNNNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGATCATGTTCAATGCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGCCAAGAGTCCAATGTACCATTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TCTACCACACAAACTCAGAACCGGAACCGTTAACCGCGGAAGAAGAACGGGAGCTCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCTACCACACAAACTCAGAACCGGAACCGTTAACCGGGGAAGAAGAAAGGGAGCTCGAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAAACTTCAAACTCTCATGGAAGCTCAAATCGTTTTCCGGTTTTCTCCGATTCGAGTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCA 360
                                                                                       AAAGAGAGAGTATGGAGCCATNAAATGAAATTGGGAAATGTAGATGAATAAATTTCTT
                                                                                                                                    1670
                                                                                                                                                                                                                                                                      1200
                                                                                                                                                                                                                                                                                                                                                                                                      1490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      950
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              420
                                                                                                                                                                                                                                                                                                                                                              1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            890
```

Š 밁 Ś ₽ S 밁 Ś 뭐

RESULT 9 AAF87062

Ś 맑 Ś 밁 á 뭥 Ś 밁 5 맑 Ś 밁

364

4

B

```
맑
                    Ś
                                                         밁
                                                                                    δ
                                                                                                                  밁
                                                                                                                                           Ś
                                                                                                                                                                           밁
                                                                                                                                                                                                      ঠ
                                                                                                                                                                                                                                     맑
                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local (
                                                                                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                         Sequence 1850 BP; 561 A; 352 C; 389 G; 548 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                    This sequence encodes the Medicago sativa (alfalfa) proline dehydrogenase (PDh) of the invention. The PDh gene is used to create transgenic plants with increased proline levels and which is therefore resistant to environmental stress. Environmental stress conditions are high salinity,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel isolated nucleic acid used to create transgenic plants with increased proline levels and resistance to environmental stress e.g. high salinity, drought.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PDh gene; proline dehydrogenase; alfalfa; transgenic plant; drought; proline level; environmental stress; high salinity; temperature; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               M. sativa PDh gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Medicago sativa.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-CCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAF87062;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAF87062 standard; DNA; 1850
                                                                                                                                                                                                                                                                                                                                                                                      extreme temperature or drought
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 4; Page 95-96; 99pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24-JAN-2000; 2000US-00490454.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10-JAN-2001; 2001WO-IL000026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200153323-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (UYRA-)
                                                                                                                                                                                                                                                                                             y Match 25.9%; Score 474.8; DB 4; Length 1850;
Local Similarity 60.5%; Pred. No. 5.1e-112;
nes 855; Conservative 0; Mismatches 547; Indels 12;
                                                                                                                                                390
                                                                                                                                                                              305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2001-483133/52.
DB; AAB83319.
                                                          425
                                                                                                                                                                                                                                                                   270 CAAAACCCACCGAGCAATCTCACGATGGTCTCGATCTCCGATCAAGCCCGTCTTTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGRIC RES ORG VOLCANI CENT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             UNIV RAMOT APPLIED RES & IND DEV LTD.
                                                                                                                                                GTCCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAACTTATGGA----CGCTTCGG
 AGCCAATGGTTGACCTCGGTACATGGATGTTGAGGTCTGATCTCATGCAGACCAATAATC
                                                                                                                                                                              CGCACGTCCCAACTACCAAACTTCTCAAATCAACTGCCATCCTCCATGCTACCGCGGTCG
                                                                                                                                                                                                                                       CAACAACCCTCCTCCCTCCCGACGCCGAGCTCAACTTCCACGACGTCGAAAAAACTCTTTT 304
                         GTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTA 566
                                                         CTTTACGTAACATTGCTATGGCTACCACACGTGCCACTTTTTTCGATCATTTTTGTGCCG
                                                                                     TGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTATGACCATTTTTGCGCCG
                                                                                                                                                                                                         Zilberstein A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product= "PDh"
/note= "Proline dehydrogenase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /*tag= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Miller G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kapulnik Y;
                                                                                                                                                                                                                                                                                                  Indels 12;
                                                                                                                                                                                                                                                                                                  Gaps
   541
                                                            484
                                                                                        506
                                                                                                                     424
                                                                                                                                                   446
                                                                                                                                                                                                            389
```

밁 S 밁 Ś 뭉 S

Ś 片 S 멼 Ş

```
1376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1227
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1019
                                                                                                          1496
                                                                                                                                                                                                                           1436
                                                                                                                                                                                                                                                                             1467
                                                                                                                                                                                                                                                                                                                                                                                          1407
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               867
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTAT 1406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TIGIGATIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACA
                                                                                                             ATATGCCATTTGGTCCTGTGGAGACTGTTATGCCATACCTCTTGAGAAGGGCTGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTCCTGGT----GGAGTTGTTCTTGCAACTCATAACATTGAATCAGGAAAATTGGCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTCTGGTTTCGGTGTCGTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGA 1346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGGATACACATAAGTGTTTCAATGATTGTTCAAATTACATGCTTGAGAAGATTGCTAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACAATTC 1226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGT 1166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGTTTGGAACCCTTCAGACTTATTTGAAAGATGCTAAGGAGAGAATGTTGTTGGCCATCAA 1078
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTGATTACTTACTTACTCTCTGCTATTATGCATAACAAAGGTGAAAAC----CCTATTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGTGCAAGCCAATATTCCATTATTGGTTGATGCTGAACATACTTCAGTTCAACCTGCTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCCAAGAGTCCAATGTACCATTGTTGATTGATGCGGAAGACACAATCCTCCAACCCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAGAAGAAGAGAGTGATCTTGATCTTGCTAACAAGAGATTCCTTGAGCTTTGTCAGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGGAAGAAGGAAAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATCTGTAGGAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAATTTTCTCTGAGTCAAGTCCTTTGTACCATACAAGGAAGAGACCAGAGCCATTAACAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGGTTTTCTCCGAATCGAGTCCTCTACCACACAAACTCAGAACCGGAACCGTTAACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGCTGAGATGGCAGAAGAAAGACCCTTCATTTGTTTTACCATGGAAGCAAGATTCATTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGCTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TCAAAGGTTTTCTTCACACCGTTGATGTCAGCAGATCGCTTCCTCCATCTTCGGTAAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TGCAACAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCT
GGAGAGTAAAAGCTTCTGTGCTTTAAATTTGTTGGATGAGTTGATGGGATGTAATAATGT
                                                     GGAGATTAATCGCCGGGATTGCGTAAAGAGAGAGTATGGAGCCATTAAATGAAATTGGGA 1646
                                                                                                                                                            ACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGA
                                                                                                                                                                                                                                                                             ACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGA 1526
                                                                                                                                                                                                                                                                                                                                  ATGGAATGTCTGAGGCACTATCTTTTGGTTTAAGCAATGCAGGGTTTCAAGTTAGCAAGT
                                                                                                                                                                                                                                                                                                                                                                                             ATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAAGAGAGCAGGGTTCAATGTTAGCAAGT 1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAAAAGCACATGAATTAGGGATTGGAAAGGTGAACCATAAGATGGAATTTGCACAACTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTAGTGAAAGAAATTGGCTGCTGATTTGGGTTATGCTTCTCCAATTCATAACACTATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGCTGCTGAGAAAATGGGGATACCAATGGGATTTAAGTTGGTTAGAGGTGCTTATATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 986
                                                                                                                                                                                                                           1495
                                                                                                                                                                                                                                                                                                                                        1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      901
```

```
맑
1616
1649
```

NO:56

```
RRESULT 10
RABL932C
IID ABL932
XX ABL932
XX ABL932
XX AFADId
XX Arabid
XX Arabid
XX Arabid
XX Arabid
XX Arabid
XX Arabid
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX AFADID
XX (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (ANTY)
PA (A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Arabidopsis thaliana; insecticide; fungicide; plant; mapping; diagnosis; genetic modification; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABL93291;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (HAMI/)
(PRIC/)
(RAIN/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10-JUN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABL93291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (LEDF/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GORL/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       26-JAN-2001; 2001US-00770444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Arabidopsis thaliana nucleic acid sequence Ref:2027056 SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (YUYY/
(RAME/
(PAGE/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27-JAN-2000; 2000US-0178502P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (HAAS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KRICKER M.
SLATER T.
DAVIS K R.
ALLEN K.
HOFFMAN N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HAAS W D.
GARCIA C A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GORLACH J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HURBAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MATHEW A V.
LEDFORD B L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WOESSNER J P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PAGE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RAMEAKA J G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RAINES T M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HAMILTON C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          standard; cDNA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Raines TM,
```

Gorlach J, Rameaka JG, ۳. An Y, Hami , Page A, M Kricker M, Hamilton CM, I A, Mathew AV, er M, Slater T, Price JL, Raines 7 Ledford BL, Woess , Davis KR, Allen Woessner wallen K, I JP, Hoffman Haas WD; Eman N;

Ś 밁 Ś 밁 Ś 문 Ş 밁 Ś B S 片 δ 밁

밁

WPI; 2002-267486/31

New Arabidopsis thaliana nucleic acid, for identifying homologous genes, producing compositions that modulate the expression or function of its encoded protein, and mapping functional regions of a protein.

Claim 1; SEQ ID NO 56; 44pp; English

comprising a sequence capable of hybridising under stringent conditions to a sequence (S1) selected from any one of the 999 sequences given in ABL93236 to ABL94234. (I) have insecticide and fungicide activities, and they can be used as protein expression modulators. (I) can be used in identifying homologous or related genes, in producing compositions that modulate the expression or function of their encoded proteins, mapping functional regions of the proteins, and in studying associated physiological pathways. (I) can also be used: (1) for the genetic manipulation of cells, particularly plant cells; (2) in screening assays of various plant strains to determine the strains that are best capable of withstanding a particular disease or environmental stress; (3) for enhancing or inhibiting production of a biosynthetic product in a plant; The present invention describes an Arabidopsis thaliana nucleic acid (I)

Ś 밁 Ş 뮍

AATGTAGATGAATAAATTTCTTCTATGTAGTTTA 1680

Ś B Ś 밁 δ 밁 Ś

```
PRACE TO A CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ន្តន្តន្តន្តន្តន្តន្តន្
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 460;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (4) as probes in mapping and in diagnosis, in genetic modification and for screening purposes, to generate additional copies of the nucleic acids, to generate ribozymes or antisense oligonucleotides, and as single stranded DNA probes or as triple-stand forming oligonucleotides; and (5) for generating genetically modified transgenic organisms. Note: The sequence data for this patent did not form part of the printed specification, but was obtained in electronic format directly from the
                                                                                  24-JAN-2000; 2000US-00490454.
                                                                                                                                                                                                                                                     WO200153323-A2
                                                                                                                                                                                                                                                                                                       Medicago sativa.
                                                                                                                                                                                                                                                                                                                                                                                                                                               M. sativa PDh gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       09-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAF87063 standard; DNA; 2596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 475 BP; 125 A; 94 C; 140 G; 116 T; 0 U; 0 Other;
                                                                                                                                    10-JAN-2001; 2001WO-IL000026
                          (UYRA-) UNIV RAMOT APPLIED RES & IND DEV LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                         gene; proline dehydrogenase; alfalfa; transgenic plant; drought;
line level; environmental stress; high salinity; temperature; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      h 23.9%;
Similarity 96.6%;
  AGRIC RES ORG VOLCANI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGT 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTGCATGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGGTCATGAGCTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGATCAAGCCCGTCTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAACCACCTCTTCACCACCCAAAACCCACCGAGCAATCTCACGATGGTCTCGATCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACCGTGACTGCTTCCACCGCCGTCGTCCCCGGAGATTCTCTCCTTTGGACAACAAGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CCGAACAAACTTTATCCGGCGATCTCACCGTTTAACCCGCTTTTAGCCCGGTGGGTCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTTCTTTTGTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGTCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACTTATGGACGCTTTCGTGACGCGTGGCATGGTTTTAGGGCCTTGTGAAAAGTACCT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGAACCACCTCTTCACCACCCAAAAACCCACTGAGCAATCTCACGATGGTCTCGATCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CCGAACAAACTTTATCCGGCGATCTTACCGTTTACCCGCTTTTAGCCCGGTGGGTCCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTTTTTTTGTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGTCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 438.4; DB 6;
Pred. No. 7.4e-103;
  CENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 475;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           υ
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      299
                                                                                  밁
                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SXCCCCCXSXTTTXXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Simi
Matches 594;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 2596 BP; 768 A; 443 C; 537 G; 848 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This sequence encodes the Medicago sativa (alfalfa) proline dehydrogenase (PDh) of the invention. The PDh gene is used to create transgenic plants with increased proline levels and which is therefore resistant to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel isolated nucleic acid used to create transgenic plants with increased proline levels and resistance to environmental stress e.g. high
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 3; Page 97-98; 99pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2001-483133/52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Stein H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   extreme temperature or drought
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           environmental stress. Environmental stress conditions are high salinity,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This sequence encodes the Medicago sativa (alfalfa) (PDh) of the invention. The PDh gene is used to create
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        salinity, drought.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                  ATATGATATTATGATAATGATTTAATTAATGTATGCAATTGAGGGGTATGAGTTTGATT 1972
                                                                                                                                                                                                                                                     CAAACGGTTCTGGTTTCGGTGTCGCCAACACATAACGCTGATTC-----
                                                                                                                                                                                                                                                                                                                                                            CAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCAT 1280
                                                                                                                                                                                                                                                                                                                                                                                                                 ATATGTCTAGTGAAAAATTGGCTGCTGATTTGGGTTATGCTTCTCCAATTCATAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATCAAAGGCTGCTGAGAAAATGGGGATACCAATGGGATTTAAGTTGGTTAGAGGTGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGGCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGG 1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTGCTATTGATTACTTACTTACTCTCTCTGCTATTATGCATAACAAAGGTGAAAAC---C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGACAAAGACCGAC 1040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGAAATGTGTGCAAGCCAATATTCCATTATTGGTTGATGCTGAACATACTTCAGTTCAAC 1558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGAAATGCCAAGAGTCCAATGTACCATTGTTGATTGATGCGGAAGACACAATCCTCCAAC 980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TAACCGCGGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATCTGTA 920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTGÄTTTGCTGAGATGGCAGAAGAAAGACCCTTCATTTGTTTTACCATGGAAGCAAGATT 1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAAT 800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TAAGCTTTGTGAATGAGATTACTGCAATATGTCCAATGAGTTTGCTTGAAAGAATGA 1318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGA 740
                                                                                                                                                                                                CTAATGGTCCTGGT---GGAGTTGTTCTTGCAACTCATAACATTGAATCAGGTATATATT 1912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACA 1220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTATTGTGTTTGGAACCCTTCAGACTTATTTGAAAGATGCTAAGGAGAGAATGTTGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TAACAGCAGAAGAAGAGATGATCTTGATCTTGCTAACAAGAGATTCCTTGAGCTTTGTC 1498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CATTGCCAATTTTCTCTGAGTCAAGTCCTTTGTACCATACAAGGAAGAAGACCAGAGCCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Zilberstein A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Miller G,
-GGGGAGACTTGCGTCGAGGAAAAGCGAGTGACCTCGGGATCG 1370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches 314;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 279.6; DB 4; Pred. No. 1.5e-61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kapulnik Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 2596;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
```

w

1795

1675

1615

```
RESULT 12
ADA70473
ID ADA70.
XX ADA70.
XX ADA70.
XX Plant
XW Plant
XW Plant
XW Plant
XW Plant
XW Plant
XX Caryza
XX W0200
XX 22-JU
XX 22-JU
XX 22-JU
XX 22-JU
XX 22-JU
XX 22-JU
XX 1dent
PT Cang
PI Katag
XX WPI;
XX Ident
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk
PT Bactk

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         당
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
Query Match
Best Local S
Matches 583
                                                                                                                                                                   The present invention relates to a method (M1) for identifying genes involved in plant resistance or response to pathogenic infection. M1 comprises identifying a gene whose expression is significantly altered in the incompatible interaction of plant gene expression relative to expression of the gene in an uninfected plant, in a mutant plant that does not express a gene associated with response to pathogenic infection, or in a corresponding incompatible or compatible interaction. (M1) is useful for conferring resistance to resistance or tolerance to a plant to bacterial, fungal or viral infection. The present sequence was used to
                                                                                                   Sequence 1227 BP; 196 A; 405 C; 426 G; 198 T; 0 U; 2 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Oryza sativa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Plant; bacterial infection; fungal infection; viral infection; rice;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rice gene, SEQ ID 3796.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chang H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           22-JUN-2001; 2001WO-IB001105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            22-JUN-2001; 2001WO-IB001105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO2003000898-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADA70473;
                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 6; SEQ ID NO 3796; 899pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Identifying at least one gene involved in plant resistance or response pathogenic infection for conferring resistance or tolerance to a plant bacterial, fungal or viral infection by determining or detecting plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Katagiri F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADA70473 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2003-175290/17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (SYGN ) SYNGENTA PARTICIPATIONS AG
                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1371 ATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCT 1430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1973 TAATTAATGATTTTTGTATAGGAAAATTGGCTGCTGCAAAAGCACATGAATTAGGGATTG 2032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  expression
     583; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GCTTTGACAGGCAACTGATGAGGTAAAAATTTCAAAAAAATTTA 2256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAAAGGTGAACCATAAGATGGAATTTGCACAACTATATGGAATGTCTGAGGCACTATCTT 2092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGATTA 1594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCCACCGGAG 1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CTGTTATGCCATACCTCTTGAGAAGGGCTGAGGAGAATAGAGGAGTGTTGGCTGCATCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TTGGTTTAAGCAATGCAGGGTTTCAAGTTAGCAAGTATATGCCATTTGGTCCTGTGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCGGGTTAAAGAGCAGCGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCCGTCGCAA 1490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Chen W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Quan S,
                                                                                                                                                      invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cooper B,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA; 1227 BP
                        14.18;
  2; Mismatches 457;
                        Score 258; DB 7;
Pred. No. 4.1e-56;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Glazebrook J, Goff Whitham S, Xie Z,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Goff SA, Ho
le Z, Zhu T,
                                                Length 1227;
     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hou
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zou
     12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ĸ
  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6 6
     4
                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                             밁
                                                                     ঠ
                                                                                                                             맑
                                                                                                                                                                        S
                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멇
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                             1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1169 AGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACAATTCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1049
                                                                        1586 AGGAGATTAATCGCCGGGATTGCGTAAAGAGAGAGA 1619
                                                                                                                                                                                                                                                                              1466 TACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAG
                                                                                                                                                                                                                                                                                                                                                                               1406 TATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAG
                                                                                                                                                                                                                                 898
                                                                                                                                                                                                                                                                                                                                                                                                                                    778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541 GCGGCGCAGGGCGAGCGCGTGTGCCTCGCGCCTCAAGCTGGTCCGCGGCGCGTACCTGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  424
                                                                                                                                                                                                                                                                                                                              838 ATGGGCATGGCGGATGGCCTCTCGCTCGGCCTCCGCAACGCCGGGTTCCAGGTGAGCAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              569 GGGATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             629 CAACAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TCTGGTTTCGGTGTCGTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGTGCATCAAGATCACGGCGCTGTGCCCGGTCGCGTTGCTGGAGAAGGCGAGTGATCTG
                             AGGAGGTTCAAGGCTGCAATGCTGGGACGTGACA 1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ANAGCGAGTGACCTCGGGATC---GATANACAGAACGGGAAGATAGAGTTTGCACAGCTA 1405
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCCG----CCGCCGTGACGCTCGCCACGCACACGTCGAGTCCGGGCAGCTCGCCGCGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AATGCTGAGAAAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGCTTACATGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CACGGCACCGTCCAGGCCTACCTCCGCGACGCGCGACCGGCTGGAGGCCATGGCGCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAAGAGTCCAATGTACCATTGTTGATTGATGCGGAAGACACAATCCTCCAACCCGCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGGAGGAGGAGCTCGARATGGCGCACGGGCGGCTGCTGGCGATCGGCGAGCGGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTTTTCTCCGAATCGAGTCCTCTCTACCACACAAACTCAGAACCGGAACCGTTAACCGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CTGCGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAAACGAGTGAGCGATCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGGATCCTCGACTACGGCATCGAGGACGCCGGAGGACGGCCCCGCCTGCGACCGCAACGCC
                                                                                                                                                                                AACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAG
                                                                                                                                                                                                                                 TACCTGCCGTACGGTCCAGTGGAGCAGATCATCCCGTACCTCATCAGACGAGCAGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                    AGGGCGCTGGAGCTCGGCATCGGCGGCGGCGGCGACCGCGGCCTGCAGTTCGCGCAGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GACACCCACGACTGCTACAACGGCTGCGCCGCGTTCCTCCTCGACCGCGTCCGCCGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGCGAGGCCCGCCTCGGCGTCCCTCGGCGTGCCGTCGCCGGTCCACCGCAGCATCCAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GACTACTTCACGTTCGCCGGCGCCTGGCGTTCAACGGCGGC---GGGAGGCCCATCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCGGAGTACGACATCCCGCTGCTGGTGGACGCCGAGTACGCCACCGTGCAGCCGGCGATC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAAGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTGCTGTGCGTCTCCAGCCCGCTGTACCTGACGGCGGCGGAGCCGCCGCCGCSCTGGAGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTGCGGTGGCAGCAGCACCCCGGCGACGAAGCTGCCATGGAAAGTGCACGGGTTCCCCG
                                                                                                                             AACAGGGGATTGCTCTCCTTCCTTCGACAGACAGCTGCTCCGGAAGGAGCTTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                   1017
                                                                                                                                                                                   1585
                                                                                                                                                                                                                                                                                 1525
                                                                                                                                                                                                                                                                                                                                                                                    1465
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     988
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         928
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                   957
                                                                                                                                                                                                                                                                                                                                      897
                                                                                                                                                                                                                                                                                                                                                                                                                                       837
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           720
```

```
ABZ16299

ABZ11

XX

AC ABZ1

XX

DT 21-0

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

XX

Arab

Arab

XX

Arab

Arab

XX

Arab

Arab

XX

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

Arab

A
                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                              Д
                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                            RESULT 14
                                                                                                                                                                                                                                  문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to identifying a stress condition to which a plant cell has been exposed, comprising: (a) contacting nucleic acid representative of expressed polynucleotides in the plant cell with an array or probes representative of the plant cell genome; and (b) detecting a profile of expressed polynucleotides in the plant cell characteristic of a stress response. The method is useful in the production of transgenic plants, cells and seeds and in producing plants with increased tolerance to abiotic stress. The present sequence is that of an Arabidopsis thaliana stress regulated gene (ABZ12196-ABZ17574) used in methods of the invention. Note: The sequence data for this patent is not represented in the printed specification but is based on sequence information supplied to Derwent by the European Patent Office
ADA69271;
                                                            ADA69271 standard; DNA; 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2000 BP; 753 A; 339 C; 244 G; 664 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 144; SEQ ID NO 4104; 577pp + Sequence Listing; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Identifying a stress condition to which a plant cell has been exposed and producing plants with increased tolerance to these abiotic stresses.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Harper JF, Kreps J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24-AUG-2000; 2000US-0227866P.
26-JAN-2001; 2001US-0264647P.
22-JUN-2001; 2001US-0300111P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24-AUG-2001; 2001WO-US026685.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Arabidopsis thaliana; plant; gene; stress; transgenic; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Arabidopsis thaliana stress regulated gene SEQ ID NO 4104.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ABZ16299;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABZ16299 standard; DNA; 2000 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (SCRI ) SCRIPPS RES INST.
                                                                                                                                                                                                                                                                                                                                                                      1910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                  61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     151;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SYNGENTA PARTICIPATIONS AG.
                                                                                                                                                                                                                                                                                                                                                                                                     GAGAAATTATTTTTTTTGTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTTATGGCAAC
                                                                                                                                                                                                                                                                                               CCGTCTTCTCCGAACAAACTTTATCCGGCGA 151
                                                                                                                                                                                                                                                                                                                                                              GAGAAATTATTTTTTTTTTTTCGTTTTCAAAAACAAATCTTTGAATTTTATGGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8.2%; Score 151; DB 6; 1 ilarity 100.0%; Pred. No. 2.1e-28; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wang
                                                            먪
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Zhu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Η
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                              1969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6
                                                                                                                                                                                                                                                                                                                                                                                                                              120
```

```
RESULT 15
ABN84373
                                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 151;
                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
Proline dehydrogenase; PRODH; enzyme; mouse; schizophrenia; obsessive compulsive disorder; bipolar disorder;
                                           Mouse proline dehydrogenase coding sequence.
                                                                           01-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2000 BP; 753 A; 339 C; 244 G; 664 T; 0 U; 0 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  involved in plant resistance or response to pathogenic infection. Mi comprises identifying a gene whose expression is significantly altered in the incompatible interaction of plant gene expression relative to expression of the gene in an uninfected plant, in a mutant plant that does not express a gene associated with response to pathogenic infection, or in a corresponding incompatible or compatible interaction. (M1) is useful for conferring resistance to resistance or tolerance to a plant to
                                                                                                          ABN84373;
                                                                                                                                   ABN84373 standard; cDNA; 1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Identifying at least one gene involved in plant resistance or response pathogenic infection for conferring resistance or tolerance to a plant bacterial, fungal or viral infection by determining or detecting plant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2003-175290/17.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bacterial,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present invention relates to a method (M1) for identifying genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 27; SEQ ID NO 2594; 899pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Chang H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22-JUN-2001; 2001WO-IB001105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22-JUN-2001; 2001WO-IB001105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO2003000898-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Arabidopsis thaliana.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plant; bacterial infection; fungal infection; viral infection; gene; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Arabidopsis thaliana gene,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20-NOV-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        illustrate the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (SYGN ) SYNGENTA PARTICIPATIONS AG
                                                                                                                                                                                                               1970
                                                                                                                                                                                                                                                                          1910
                                                                                                                                                                                                                                                                                                                                    1850
                                                                                                                                                                                                                                            121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         expression.
                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                   بر
                                                                                                                                                                                                                                                                                                                                                                                                            h 8.2%; Score 151; DB 7; 1 Similarity 100.0%; Fred. No. 2.1e-28;
                                                                                                                                                                                                                                            CCGTCTTCTCCGAACAAACTTTATCCGGCGA 151
                                                                                                                                                                                                                                                                          GAGAAATTATTTTTTTTTTGTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTTATGGCAAC 1969
                                                                                                                                                                                                                                                                                                  GAGAAATTATTTTTTTTTGTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAAC
                                                                                                                                                                                                                                                                                                                                    CCGTCTTCTCCGAACAACTTTATCCGGCGA 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chen W,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     fungal or viral infection. The present sequence was used
                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Quan S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cooper B,
S, Tao Y,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQ ID 2594.
                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                     ВP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Glazebrook J, Goff SA, Whitham S, Xie Z, Zhu
                                                                                                                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                                                                                                                                            Length 2000;
                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ţ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HOL
                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                       120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6 6
```

```
Matches 367;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 6.7%; Score 123.6; DB 6; Length 1494; Best Local Similarity 48.7%; Pred. No. 2.2e-21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present sequence is the coding sequence of murine proline dehydrogenase (PRODH). The invention relates to isolated nucleic acids which encode human and murine PRODH, and methods for determining susceptibility to, or the presence of, schizophrenia or a related disease or disorder, such as obsessive computative disorder, bipolar disorder or major depressive disorder in a subject by determining levels of PRODH in a bodily sample. A polymorphism of the human PRODH gene (see ABN84372) has been identified which correlates to a phenotype closely related to schizophrenia or a related disorder or disorder. A method for determining susceptibility to schizophrenia is based on the determination of this polymorphism in the PRODH gene of a subject. Assays are provided for drugs or agents that can treat schizophrenia and related diseases and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cbs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                major depressive disorder; diagnosis; gene; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1494 BP; 357 A; 372 C; 459 G; 305 T; 0 U; 1 Other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Determining susceptibility in humans to schizophrenia comprises determining in sample from subject, a variation of T-C transition in determining in sample from subject, a variation of T-C transition in determining in sample from subject, a variation of codon 497 of polynucleotide sequence of human proline first position of codon 497 of polynucleotide sequence of human proline
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US6395482-B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Col 75-76; 60pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      dehydrogenase gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13-JAN-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-MAY-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P-PSDB; ABB79578.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Karayiorgou M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UYRQ ) UNIV ROCKEFELLER.
                                             1151 AGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCA 1210
                                                                                                                                                                                                    1091 CTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTG 1150
                                                                                                                                                                                                                                                                                                                                                          1031 AAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGA 1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2002-556094/59.
                                                                                                                             958 GTGACCTTGGATATGGAACTGGCTCGCCGTGAGGGCTGGTGTTCCGGGGCCAAGCTGGTA 1017
                                                                                                                                                                                                                                                                                   904 AAG-----CCGTTCATCTTCAACACATTCCAGTGCTACCTCAAGGATGCCTATGACAAT 957
                                                                                                                                                                                                                                                                                                                                                                                                                                         844 TACTTCCAACCAGCCATCAGCCGCCTGACCCTGGAGATGCAGCGCAGGTTCAATGTGGAT 903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    851 CCGGAACCGTTAACCGCGGAAGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAA 910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        971 ATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGAC 1030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
Gogos JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99US-00229530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-00277262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1. .1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /product= "Proline dehydrogenase"
    =
=
=
=
=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches 380; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
```

8 B

8 8 8 8 8 8 8

밁

Search completed: March 10, 2004, 11:20:39 Job time : 640.084 secs

```
Result
No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                              n
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                             0000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score
        11111
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
20002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Issued_Patents_NA:*

1: /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
2: /cgn2_6/ptodata/2/ina/5B_COMB.seq:*
3: /cgn2_6/ptodata/2/ina/6A_COMB.seq:*
4: /cgn2_6/ptodata/2/ina/6B_COMB.seq:*
5: /cgn2_6/ptodata/2/ina/FCTUS_COMB.seq:*
6: /cgn2_6/ptodata/2/ina/backfiles1.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IDENTITY NUC Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         March 10, 2004, 10:29:50 ; Search time 128.386 Seconds (without alignments) 7923.149 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        682709 seqs, 277475446 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-10-026-767-3
1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 agcgtttagaaaaaaacagc....ataaaaatgcttttacttt 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Maximum Match 100%
Listing first 45 summaries
        GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.
        1494
2240
1551
1551
1551
1751
917
7218
831
7218
831
19124
810
810
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
14176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB
US-09-277-262-3

US-09-277-262-1

US-09-277-262-1

US-09-277-262-9

US-09-232-463-14

US-08-232-463-14

US-08-232-463-14

US-08-232-463-14

US-08-232-463-14

US-08-232-463-14

US-08-232-463-14

US-09-645-055-55

US-10-204-708-51

US-08-307-499-51

US-08-307-499-14

US-08-307-499-14

US-09-299-268-14

US-09-299-268-14

US-09-299-268-14

US-09-306-593-1

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3958-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33

US-09-308-3158-33
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUMMARIES
Sequence 3, Appli
Sequence 7, Appli
Sequence 1, Appli
Sequence 37, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 56, Appli
Sequence 56, Appli
Sequence 51, Appli
Sequence 51, Appli
Sequence 51, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 14, Appli
Sequence 17, Appli
Sequence 17, Appli
Sequence 18, Appli
Sequence 33, Appli
Sequence 33, Appli
Sequence 33, Appli
Sequence 33, Appli
Sequence 33, Appli
Sequence 33, Appli
Sequence 33, Appli
Sequence 33, Appli
Sequence 33, Appli
Sequence 33, Appli
Sequence 33, Appli
Sequence 31, Appli
Sequence 33, Appli
Sequence 31, Appli
Sequence 31, Appli
Sequence 31, Appli
Sequence 31, Appli
Sequence 31, Appli
Sequence 31, Appli
Sequence 31, Appli
Sequence 31, Appli
Sequence 31, Appli
Sequence 31, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
```

																-
. 15	유 성	B 8	B &	용 성	유 성	2 110	8		a	იი	n	Ω	ი	ი ი		α α
				-		Query Ma Best Loo Matches	SULT 1 Sequence 3, 3 Sequence 3, 3 Sequence 3, 4 Patent No. 6 GENERAL INFO APPLICANT: 1 TITLE OF IN TITLE OF IN TITLE OF IN TITLE REFERE CURRENT APPL CURRENT APPL CURRENT APPL CURRENT APPL CURRENT APPL CURRENT FIL NOBER OF SI SEQ ID NO 3 LENGTH 14 TYPE: DNA ORGANISM: 1 ORGANISM: 1 ORGANISM: 1 ORGANISM: 1		4 4 4 5 4 7	4 4 3 2	± 4. ± ∪ 0 ←	37 38	თ თ თ თ	e e u 4	321	322 098
1151 A	8 1	1031 A/ 904 A/	971 A: 844 T/	911 GJ 784 G	851 CC	y Match Local Simi hes 367;	SEGULT 1 Sequence 3, Application US/0, Patent No. 6395482 Patent No. 6395482 GENERAL INFORMATION: APPLICANT: KATAYIOTGOU, MAX. APPLICANT: KGGGOS, JOSEPH A. TITLE OF INVENTION: METHODS TITLE OF INVENTION: THERETO FILLE REFERENCE: 6001-123 C. CURRENT APPLICATION NUMBER: CURRENT FILING DATE: 1999-0. EARLIER APPLICATION UNBER: EARLIER FILING DATE: 1999-0. NUMBER OF SEQ ID NOS: 9 SOUTWARE: PATENTIN VET. 2.0 SEQ ID NO 3 LENGTH: 1444 TYPE: DNA ORGANISM: Mus musculus JS-09-277-262-3									ათ. ათ. ი
AGGGGC	rgcattr 	AAAGACCGI AAG	ATCCTCCAACO	AATCIG	CGAACC	larit Conse	52-3 3, Application 3, Application 3, G39540 10 KARAYION: 1: KARAYIORGON, 1: K							ĻĻ		222
TACATG	GGCAGTA	ACCAATO	ACCCGCGA ACCAGCCA	TAGGAAA CAAGAAA	STTAACC	6. 48. vative	on on seep or THE 119 119 119 119 119 119 119 119 119 11		4709 5219	837 1180	6265 636	3498 688	289 3498	640681 289	10467 40681	6306 8961 1664976
-CI	6 – 6 2 – 8	CGTTTA CATCTT	ATC	TGC	6 —6 —6 —6 —6 —6	7.7	0927 S OF S OF COLP				w .a. u					444
AGAGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCCTGGGTTGCAAGTCGCC	CTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTG	aaagaccgaccaatcgtttacaacacgattcaggcgtacttgagagacgccggtgagaga 	CAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGAC 	GAAATCTGTAGGAAATGCCAAGAGTCCAATGTACCATTGTTGATTGA	CCGGAACCGTTAACCGCGGAAGAAGAAGGAAGCTCGAAGCAGCTCATGGAAGGA 	Score 123.6; DB 4; Le Pred. No. 1.8e-25; 1; Mismatches 380; In	MATIA A HODS OF DETERMINING A SUSCEPTIBILITY TO SCHIZOPHRENIA, OR A DISEASE OR DISORDER CAPTO STATE 23 CIP BER: US/09/277,262 99-01-26 BER: 09/229,530 99-01-13	ALIGNMENTS	US-08-956-171E-587 US-10-204-708-52	08-998-416-28 08-969-046-6	998-416-9 129-112-3 998-416-11	09-421-868-1 08-998-416-97	09-244-796- 08-293-728-	09-790-988- 09-007-005-	10-204-708-2 09-790-988-1	204-708- 204-708- 204-708-
CTGGGTTGCAAGTCGCCA 1210	CAAGTTGGTG 115	AGAGACGCCGGTGAGAGA 109 AAGGATGCCTATGACAAT 957	CTTATTCATCGGCGATCAIGTTCAATGCTGAC 103	ATTGATGCGGAAGACACA 970 ATTGATGCTGAGCAGAGC 843	TCGAAGCAGCTCATGGAAGGATTCAA 910 	ength 1494; .ndels 6; Gaps 1	ILITY TO OR PRESENCE DISORDER RELATED		10 10			1, 97	17	Sequence 1, Appli Sequence 17, Appl	1,2	Sequence 49, Appl Sequence 80, Appl Sequence 1, Appli

片

1018 CGTCGTGCATACATGGCCCAAGAGCGTGTCAGGGCAGCAGAGATCGGTTATGAAGACCCC 1077

```
밁
                                                                                           B
                                                                                                                                      Ś
                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                  밁
                                      Ş
                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 2
US-09-277-262-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: DNA
; ORGANISM: Mus musculus
US-09-277-262-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVESTION: METHODS OF DETERMINING A SUSCEPTIBILITY TO OR PRESENCE TITLE OF INVENTION: OF SCHIZOPHRENIA, OR A DISEASE OR DISORDER RELATED TITLE OF INVENTION: THERETO FILE REFERENCE: 600-1-223 CIP CURRENT APPLICATION NUMBER: US/09/277,262 CURRENT FILING DATE: 1999-03-26 EARLIER APPLICATION NUMBER: 09/229,530 EARLIER FILING DATE: 1999-01-13 NUMBER OF SEQ ID NOS: 9

SOFTWARE: Patentin Ver. 2.0

SEQ ID NO 7

LENGTH: 2240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: Karayiorgou, Maria
APPLICANT: Gogos, Joseph A
                                                                                                                                                                                                                                                                                                                                                                                   Matches 367;
                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 7, Application US/09277262
Patent No. 6395482
1200 AAG-----CCGTTCATCTTCAACACATTCCAGTGCTACCTCAAGGATGCCTATGACAAT 125
                                      1031 AAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGA 1090
                                                                                        1140 TACTTCCAACCAGCCATCAGCCGCCTGACCCTGGAGATGCAGCGCAGGTTCAATGTGGAT 1199
                                                                                                                                                                                    1020 CTGTCACGGTTCACTGAGGAGGÄAGÄGCAGCAGATGAÄAAGGATGCTGCAGAGGÄTGGÄT 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1438 TGGCAGGAGCTCCGCAGGCGGCTGCGCACTGGCA 1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1571 AGGATGGAACTTAAGAGGAGATTAATCGCCGGGA 1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1331 GGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATA 1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1138 GAGGAGCTGAAGCACCAACGCAGGAAGTGATGGTGGCTTCCCACAACGAGGACACC 1197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1078 ATCAACCCTACATATGAAGCCACCAATGCTATGTACCACAGGTGCCTTAACTATGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1391 GAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGG 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1271 GAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCG 1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1211 GTCCACGACACTTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATG
                                                                                                                                      971 ATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGAC 1030
                                                                                                                                                                                                                                  851 CCGGAACCGTTAACCGCGGAAGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAA 910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTCCTGTGTACAAGTATGTGCCCTATGGCCCTGTGATGGAGGTACTCCCTTACCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGGTCAACTCATG 1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTC 1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGCACTTCACKTTGTGCAGGATGAAGGAGATAGGCCTGCATCCTGCTGATGGTCAGGTG 1257
                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                             6.7%; Score 123.6; DB 4; Length 2240;
48.7%; Pred. No. 2.3e-25;
ative 1; Mismatches 380; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1317
```

```
GENERAL INFORMATION:

APPLICANT: Karaylorgou, Maria

APPLICANT: Karaylorgou, Maria

APPLICANT: GGGOS, JOSEPH A

ITITLE OF INVENTION: METHODS OF DETERMINING A SUSCEPTIBILITY TO OR I

TITLE OF INVENTION: OF SCHIZOPHRENIA, OR A DISEASE OR DISORDER RELA

TITLE OF INVENTION: THERETO

FILE REFERENCE: 600-1-23 CIP

CURRENT APPLICATION NUMBER: US/09/277,262

CURRENT FILING DATE: 1999-03-26

EARLIER APPLICATION NUMBER: 09/229,530

EARLIER APPLICATION NUMBER: 09/229,530

EARLIER APPLICATION NUMBER: 09/229,530

EARLIER APPLICATION NUMBER: 09/229,530

EARLIER APPLICATION SUMMER: 09/229,530

EARLIER APPLICATION SUMMER: 09/229,530

EARLIER APPLICATION SUMMER: 09/229,530

EARLIER APPLICATION SUMMER: 09/229,530

EARLIER APPLICATION SUMMER: 09/229,530

EARLIER APPLICATION SUMMER: 09/229,530

EARLIER APPLICATION SUMMER: 09/229,530

EARLIER APPLICATION SUMMER: 09/229,530

EARLIER APPLICATION SUMMER: 09/229,530

EARLIER APPLICATION SUMMER: 09/229,530

EARLIER APPLICATION SUMMER: 09/229,530
Ś
                                                       ႘
                                                                                                         5
                                                                                                                                                                          밁
                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-277-262-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-277-262-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/09277262 Patent No. 6395482
                                                                                                                                                                                                                                                                                            Matches 350;
                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: DNA ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1674 CGCCGTGCCCTGGAGAACAGCAGCATCATGAAGGGTGCTCAGCGAGAGAGGCAGCTGCTA 1733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1734 TGGCAGGAGCTCCGCAGGCGGCTGCGCACTGGCA 1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1571 AGGATGGAACTTAAGAGGAGATTAATCGCCGGGA 1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1434 GAGGAGCTGAAGCACCAGCAAGGCAGAAGTGATGGTGGCTTCCCACAACGAGGACACC 1493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1374 ATCAACCCTACATATGAAGCCACCAATGCTATGTACCACAGGTGCCTTAACTATGTTCTG 1433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1254 GTGACCTTGGATATGGAACTGGCTCGCCGTGAGGGCCTGGTGTTCCGGGGGCCAAGCTGGTA 1313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1391 GAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGG 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1211 GTCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATG 1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1091 CTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTG 1150
   977 CAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGACAAAGAC 1036
                                                          847 GCCAAGAAAGCCACAGAGATGGGCGTGCTGATGGTGGATGCCGAGCAGACCTACTTC
                                                                                                               857 CCGTTAACCGCGGAAGAAGAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATC 916
                                                                                                                                                                          TTTCCTGTGTACAAGTATGTGCCCTATGGCCCTGTGATGTAGGTACTCCCTTACCTGTCC 1673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATG 1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGCACTTCACKTTGTGCAGGATGAAGGAGATAGGCCTGCATCCTGCTGATGGTCAGGTG 1553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATA 1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCG 1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CGTCGTGCATACATGGCCCAAGAGCGTGTCAGGGCAGAGATCGGTTATGAAGACCCC 1373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCA 1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TICAATGITAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTC 1510
                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                     5.8%;
                                                                                                                                                                                                                                                                                         Score 107.2; DB 4; Length Pred. No. 1e-20; O; Mismatches 378; Indels
                                                                                                                                                                                                                                                                                                                                                 Length 1551;
                                                                                                                                                                                                                                                                                            6,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OR PRESENCE
RELATED
                                                             906
                                                                                                                                                                             846
```

```
APPLICANT: KATAYIONGOU, MARIA
APPLICANT: GOGOS, JOSEPH A
ITILE OF INVENTION: METHODS OF DETERMINING A SUSCEPTIBILITY TO OR PRESENCE
ITILE OF INVENTION: METHODS OF DETERMINING A DISEASE OR DISORDER RELATED
ITILE OF INVENTION: OF SCHIZOPHRENIA, OR A DISEASE OR DISORDER RELATED
ITILE OF INVENTION: THERETO
ITILE OF INVENTION: THERETO
ITILE REFERENCE: 600-1-223 CIP
CURRENT APPLICATION NUMBER: US/09/277,262
CURRENT FILING DATE: 1999-03-26
CURRENT FILING DATE: 1999-03-26
EARLIER FILING DATE: 1999-03-13
NUMBER OF SEQ ID NOS: 9
SOFTWARE: Patentin Ver. 2.0
SOFTWARE: Patentin Ver. 2.0
SOFTWARE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-277-262-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                             8
                                                                                                                                                                                                     US-09-277-262-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 9, Application US/09277262
Patent No. 6395482
                                                                             Query Match 5.8
Best Local Similarity 47.7
Matches 350; Conservative
                                                                                y Match 5.8%; Score 107.2; DB 4; Length 2389;
Local Similarity 47.7%; Pred. No. 1.3e-20;
hes 350; Conservative 0; Mismatches 378; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1577 GAACTTAAGAGGAG 1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1261 TTCGCACTGCGCAGGATGGAGGAGCTGGGCCTGCATCCTGCTGACCACCAGGTGTACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1337 CTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTT 1396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1201 CTGAAGCACAACGCCAAGGCCAAGGTGATGGTGGCCTCCCACAATGAGGACACAGTGCGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1277 GCATCANACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACACATAACGCTGATTCGGGGAGA 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1141 CCCACGTACGAGGCCACCAACGCCATGTACCACAGGTGCCTGGACTACGTGTTGGAGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1217 GACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAA 1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1081 GCATACCTGGCCCAGGAGCCGAGCCGGTGCGGCAGAGATCGGCTATGAGGACCCCATCAAC 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1021 CTGGACGTGGAGCTGGCTCGCCGTGAGGGCTGGTGTTTTGGGGCCAAGCTGGTGCGGGGC 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1037 CGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCAT 1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    907
857 CCGTTAACCGCGGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATC 916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGG 1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        --GCCGCTCATCTTCÀACACATACCAGTGCTACCTCAAGGATGCCTATGACAATGTGACC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAGCCGGCCATCAGCCGCCTGACGCTGGAGATGCAGCGGAAGTTCAATGTGGAGAA----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTGTACAAGTACGTGCCCTATGGCCCCGTGATGGAGGTGCTGCCCTACTTGTCCCGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGCTCTTGAGGCG 1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATG 1576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGACAGCTGCTAGGCATGTGTGACCAGATCAGCTTCCCGCTGGGCCAGGCCGGCTACCCC 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCCCTGGAGAACAGCAGCCTCATGAAGGGCACCCATCGGGAGCGGCAGTTGCTGTGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAAT
                                                                                      ٠<u>.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       962
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         먉
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     片
                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-023-655-378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 378, Application US/09023655 Patent No. 6607879
                                                                                                                                                                                                                                                             GENERAL INFORMATION:
APPLICANT: Cocks, Benjamin G.
APPLICANT: Susan G. Stuart
APPLICANT: Jeffrey J. Seilhamer
TITLE OF INVENTION: COMPOSITION
TITLE OF INVENTION: EXPRESSION
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatil
OPERATING SYSTEM: PC-DOS
                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
                                                                                         ZIP:
                                                                                                                                     STATE:
                                                                                                                                                        STREET: 3174 PORTER DRIVE CITY: PALO ALTO
                                                                                                                                                                           STREET:
                                                                                                              COUNTRY:
                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1947 GAGCTCTTGAGGCG 1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1217 GACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAA 1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1577 GAACTTAAGAGGAG 1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CTGAAGCACAACGCCAAGGCCAAGGTGATGGTGGCCTCCCACAATGAGGACACAGTGCGC 1706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAGA 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCCACGTACGÁGGCCACCAACGCCATGTACCACAGGTGCCTGGACTACGTGTTGGAGGAG 1646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CTGGACGTGGAGCTGGCCCGTGAGGGCTGGTGTTTTGGGGGCCAAGCTGGTGCGGGGC 1526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --GCCGCTCATCTTCAACACATACCAGTGCTACCTCAAGGATGCCTATGACAATGTGACC 1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCAT 1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GCCAAGAAAGCCACAGAGATGGGCGTGCGGCTGATGGTGGATGCCGAGCAGACCTACTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGACAGCTGCTAGGCATGTGTGACCAGATCAGCTTCCCGCTGGGCCAGGCCGGCTACCCC 1826
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TTCGCACTGCGCAGGATGGAGGAGCTGGGCCTGCATCCTGCTGACCACCAGGTGTACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTT 1396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCATACCTGGCCCAGGAGCGAGCCCGTGCGGCAGAGATCGGCTATGAGGACCCCCATCAÁC 1586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCAC 1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGG 1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAGCCGGCCATCAGCCGCCTGACGCTGGAGATGCAGCGGAAGTTCAATGTGGAGAA---- 1408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGACAAAGAC 1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GCCCTGGAGAACAGCAGCCTCATGAAGGGCACCCATCGGGAGCGGCAGTTGCTGTGGCTG 1946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATG 1576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GIGTACAAGTACGIGCCCTATGGCCCCGTGATGGAGGTGCTGCCCTACTTGTCCCGCCGT 1886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GITAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGC 1516
                                                                                                                                   CALIFORNIA
                                                                                                              USA
                                                                                                                                                                                                       INCYTE PHARMACEUTICALS,
    pc-pos/Ms-pos
                                                                                                                                                                                                                                               1508
                                                                                                                                                                                                                                                                                         FOR THE DETECTION OF BLOOD CELL GENE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1352
```

```
Ś
                                          Ś
                                                                                            밁
                                                                                                                                                                                                                              5
                                                                                                                                                                                                                                                                                                                           Ş
                                                                                                                                                                                                                                                                                                                                                                           片
                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
  밁
                                                                                                                                    S
                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ÚS-09-023-655-378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 4.8%; Score 87.2; DB 4; Length 917; Best Local Similarity 47.9%; Pred. No. 4.4e-15; Matches 251; Conservative 0; Mismatches 273; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEFAX: (650) 845-4166
INFORMATION FOR SEQ ID NO: 3
SEQUENCE CHARACTERISTICS:
LENGTH: 917 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IMMEDIATE SOURCE:
LIBRARY: SINTE
CLONE: 1501023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: Zeller, Karen J.
REGISTRATION NUMBER: 37,071
REFERENCE/DOCKET NUMBER: PA.
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Zeller, Karen J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: FILING DATE: HEREWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1127 GTTCCTATGGGGTTCAAGTTGGTGAGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCG 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1067 TACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAAT 1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1247 AATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTT 1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1547 GGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAG 1590
                                                                                                                                                                                                                                                                                                                              1367 ATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTG 1426
                                                                                                                                                                                                                                                                                                                                                                                                                        1307 СТСССАЛСАСАТАЛССТСАТТСССССАДАСТТСССТССАССАЛАДССДАСТСАССТСССС 1366
                                                                                                                                       1487 GCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACC 1546
                                                                                                                                                                                                                                    1427 TCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTC 1486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          185 CÁCAGGTGCCTGGACTATGTTGGAGGAGCTGAAGGCAAAGGCCAAGGTGATG 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125 GCAGAGATCGGCTATGÁGGACCCCATCAACCCCACGTACGAGGCCACCAACGCCATGTÁC 184
                                                                                          425 ATGGAGGTGCCGTACTTGTCCCGGCGTGCCCTGGAGAACAGCAGCCTCATGAAGGGC
                                                                                                                                                                                      365 AGCTTCCCGCTGGGCCAGGCCGGCTACCCCGTGTACAAGTACGTGCCCTATGGCCCCGTG 424
                                                                                                                                                                                                                                                                                 305 CTGCATCCTGCTGACCACCAGGTGTACTTTGGACAGCTGCTAGGCATGTGTGACCAGATC 364
485 ACCCATCGGGÁGCGGCÁGTTGCTGTGGCTGGÁGCTCTTGÁGGCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTGGCCTCCCACAATGAGGACACAGTGCGCTTCGCACTGCGCAGGATGGAGGAGCTGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SINTESTOL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Word Perfect 6.1 for Windows/MS-DOS 6.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (650) 855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HEREWITH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    378:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PA-0001 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          <u>.</u>
```

```
RESULT 6
US-08-232-463-14
; Sequence 14, Application US/08232463
; Patent No. 5670367
; GENERAL INFORMATION:
```

S 밁 S ₽ Ś 밁 Ş 뮍 Ś 밁 Ś ; TOPOLOGY: line; ; IMMEDIATE SOURCE: ; CLONE: pTZgpt-1 US-08-232-463-14 밁 Matches Query Match INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 7218 base pairs FILING DATE: 26-AUG-1991
ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET NUMBER: 3047
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703)836-9300 APPLICANT: SCHEIFLINGER, F.
APPLICANT: FALKNER, F. G.
TITLE OF INVENTION: RECOMBINANT FOWLPOX VIRUS
NUMBER OF SEQUENCES: 52 ZIP: 22313-0299
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/232,463 CLASSIFICATION: 435 PRIOR APPLICATION DATA: CORRESPONDENCE ADDRESS: APPLICATION NUMBER: ADDRESSEE: % Match 3.2%; Score 58.6; DB 1; Length 7218; Local Similarity 1.3%; Pred. No. 2.7e-06; es 4; Conservative 198; Mismatches 107; Indels 0 STRANDEDNESS: single TELEFAX: APPLICATION NUMBER: 1432 YYYGTACCA 1440 187 TCCCACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGC 367 CGTGTTGCA 375 307 CTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGC 366 127 TCTCCGAACAAACTTTATCCGGCGATCTTACCGTTTACCCGCTTTTAGCCCGGTGGGTCC 186 247 ACCGGAACCACCTCTTCACCACCCAAAACCCCACCGAGCAATCTCACGATGGTCTCGATCT 306 67 TTATTTTTTTTTTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGTCT 126 nucleic acid Ł ŞΆ 899149 pTZgpt-F1s 1800 Diagonal Road, Suite 500 USA lexandria (703)683-4109 linear Foley & Lardner EP 91 114 300.6 US/07/935,313 14: 30472/114 IMMU 0; Gaps

```
RESULT 4
US-09-277-262-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 9, Application US/09277262 Patent No. 6395482
                                                                         Best Local Similarity Matches 350; Conserv
                                                                                                                                                                                                        SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 9
LENGTH: 2389
TYPE: DNA
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                           CURRENT APPLICATION NUMBER: US/09/277,262
CURRENT FILING DATE: 1999-03-26
EARLIER APPLICATION NUMBER: 09/229,530
EARLIER FILING DATE: 1999-01-13
NUMBER OF SEQ ID NOS: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Karayiorgou, Maria
APPLICANT: Gogos, Joseph A
TITLE OF INVENTION: METHODS OF DETERMINING A SUSCEPTIBILITY TO OR PRESENCE
TITLE OF INVENTION: OF SCHIZOPHRENIA, OR A DISEASE OR DISORDER RELATED
TITLE OF INVENTION: THERETO
FILE REFERENCE: 600-1-223 CIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1501 GAGCTCTTGAGGCG 1514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1577 GAACTTAAGAGGAG 1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1261 TTCGCACTGCGCAGGATGGAGGAGCTGGGCCTGCATCCTGCTGACCACCAGGTGTACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1201 CTGAAGCÁCAACGCCAAGGCCAAGGTGATGGTGGCCTCCCÁCAATGAGGÁCACAGTGCGC 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1277 GCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAGA 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1141 CCCACGTACGAGGCCACCAACGCCATGTACCACAGGTGCCTGGACTACGTGTTGGAGGAG 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1217 GACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAA 1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1157 GCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCAC 1216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1021 CTGGACGTGGAGCTGGCTCGCCGTGAGGGCTGGTTTTTGGGGGCCAAGCTGGTGCGGGGC 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1037 CGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCAT 1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               963 --GCCGCTCATCTTCAACACATACCAGTGCTACCTCAAGGATGCCTATGACAATGTGACC 1020
857 CCGTTAACCGCGGAAGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATC 916
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GGACAGCTGCTAGGCATGTGTGACCAGATCAGCTTCCCGCTGGGCCAGGCCGGCTACCCC 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTGGCAGTACAAAATGCTGAGAAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGG 1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATG 1576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCATACCTGGCCCAGGAGCCGAGCCCGTGCGGCAGAGATCGGCTATGAGGACCCCCATCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGC 1516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAAT 1456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GCCCTGGAGAACAGCAGCCTCATGAAGGGCACCCATCGGGAGCGGCAGTTGCTGGTGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTGTACAAGTACGTGCCCTATGGCCCCGTGATGGAGGTGCTGCCCTACTTGTCCCGCCGT
                                                                                    Conservative
                                                                            5.8%; Score 107.2; DB 4; Length 2389;
47.7%; Pred. No. 1.3e-20;
ative 0; Mismatches 378; Indels 6; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          144C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1500
```

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 5
US-09-023-655-378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                               Sequence 378, Application US/09023655
Patent No. 6607879
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Cocks, Benjamin G.
APPLICANT: Susan G. Stuart
APPLICANT: Susan G. Stuart
APPLICANT: Susan G. Stillamer
TITLE OF INVENTION: COMPOSITION FOR THE DETECTION OF BLCOD CELL GENE
TITLE OF INVENTION: EXPRESSION
NUMBER OF SEQUENCES: 1508
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: BEAUTION PC-DOS/MS-DOS
                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: INCYTE PHARMACEUTICALS,
STREET: 3174 PORTER DRIVE
                                                                                                  ZIP: 94304
                                                                                                                                                  CITY: PALO ALTO
STATE: CALIFORNIA
                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1647 CTGAAGCACAACGCCAAGGCCAAGGTGATGGTGGCCTCCCACAATGAGGACACAGTGCGC 1706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1587 CCCACGTACGAGGCCACCAACGCCATGTACCACAGGTGCCTGGACTACGTGTTGGAGGAG 1646
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1217 GACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAA 1276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1947 GAGCTCTTGAGGCG 1960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1577 GAACTTAAGAGGAG 1590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1293 GCCAAGAAAGCCACAGAGATGGGCGTGCGGCTGATGGTGGATGCCGAGCAGACCTACTTC 1352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1517 GCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATG 1576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAGA 1336
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TTGGCAGTACAAAATGCTGAGAAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGG 1156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      --GCCGCTCATCTTCAACACATACCAGTGCTACCTCAAGGATGCCTATGACAATGTGACC 1466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ĊĄĠĊĊĠĠĊĊĀŢĊĄGCCĠĊĊŢĠĄĊĠĊŢĠĠĄĠAŢĠĊĄĠĊĠĠĀAGŢŢĊĄĄŢĠŢĠĠĄĠĄĄ~--- 1408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGACAAAGAC 1036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCCTGGAGAACAGCAGCCTCATGAAGGGCACCCATCGGGAGCGGCAGTTGCTGTGGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGTACAAGTACGTGCCCTATGGCCCCGTGATGGAGGTGCTGCCCTACTTGTCCCGCCGT 1886
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGC 1516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAAT 1456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCGCACTGCGCAGGATGGAGGAGCTGGGCCTGCATCCTGCTGACCACCAGGTGTACTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTT 1396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCATACCTGGCCCAGGAGCCAGCCCGTGCGGCAGAGATCGGCTATGAGGACCCCATCAAC 1586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTGGACGTGGAGCTGGCTCGCCGTGAGGGCTGGTGTTTTGGGGGCCAAGCTGGTGCGGGGC 1526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCAT 1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGACAGCTGCTAGGCATGTGTGACCAGATCAGCTTCCCGCTGGGCCAGGCCGGCTACCCC 1826
                                                                                                                            USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1216
```

APPLICANT:

DORNER,

```
S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              片
RESULT 6
US-08-232-463-14
                                                                                          밁
                                                                                                                               S
                                                                                                                                                                               맑
                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                       á
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-023-655-378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4.8%;
Best Local Similarity 47.9%;
Matches 251; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE: (650) 855-0555
TELEFAX: (650) 845-4166
INFORMATION FOR SEQ ID NO: 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     IMMEDIATE SOURCE:
LIBRARY: SINTES
CLONE: 1501023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Word Perfect 6.1 for Windows/MS-DOS 6.2 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Zeller, Karen J. REGISTRATION NUMBER: 37, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1067 TACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAAT 1126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1247 AATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTT 1306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1127 GTTCCTATGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGTCTAGCGAACGTAGCTTGGCG 1186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1487 GCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACC 1546
                                                                                                                                   1547 GGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAG 1590
                                                                                                                                                                                                                                                                                                          1427 TCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTC 1486
                                                                                                                                                                                                                                                                                                                                                                                             1367 ATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTG 1426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1307 CTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGG 1366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              185 CACAGGTGCCTGGACTACGTGTTGGAGGAGCTGAAGCACAACGCCAAGGCCAAGGTGATG 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125 GCAGAGATCGGCTATGÁGGACCCCATCAACCCCACGTACGAGGCCACCAACGCCATGTAC
                                                                                                                                                                                                                                                                  365 AGCTTCCCGCTGGGCCAGGCCGGCTACCCCGTGTACAAGTACGTGCCCTATGGCCCCGTG 424
                                                                                                                                                                                                                                                                                                                                                   305 CTGCÁTCCTGCTGÁCCACCÁGGTGTÁCTTTGGÁCÁGCTGCTAGGCATGTGTGACCAGATC 364
                                                                                          485 ACCCATCGGGAGCGGCAGTTGCTGTGGCTGGAGCTCTTGAGGCG 528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       65 TGGTGTTTTGGGGCCAAGCTGGTGCGGGGCGCATACCTGGCCCAGGAGCCGAGCCCGTGCG 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ທ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      : 917 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                           GTGGCCTCCCACAATGAGGACACAGTGCGCTTCGCACTGCGCAGGATGGAGGAGCTGGGC 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TACCTCAAGGATGCCTATGACAATGTGACCCTGGATGTGGAGCTGGCTCGCCGTGAGGGC 64
                                                                                                                                                                             ATGGAGGTGCTGCCCTÁCTTGTCCCGCCGTGCCCTGGAGAACAGCAGCCTCATGAAGGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SINTBST01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HEREWITH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US/09/023,655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           37,071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   378:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches 273;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PA-0001 US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 87.2; DB 4; Length 917; Pred. No. 4.4e-15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

Sequence 14, Application US/08232463
Patent No. 5670367
GENERAL INFORMATION:

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-232-463-14
                                                                                           Ś
                                                                                                                            밁
                                                                                                                                                         á
                                                                                                                                                                                            밁
                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                             片
                                                                                                                                                                                                                                                                                                                            멅
                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE:
APPLICATION NUMBER: EP 91 114
FILING DATE: 26-AUG-1991
ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET NUMBER: 3047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: SCHEIFLINGER, F.
APPLICANT: FALKNER, F.G.
TITLE OF INVENTION: RECOMBINANT FOWLPOX VIRUS
NUMBER OF SECURNCES: 52
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE: Ploppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: 111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: (703)683-4109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: Foley & Lardner
STREET: 1800 Diagonal Road, Suite 500
                                                                                                                                                                                                                                                                                                                                                                                            Match 3.2%; Score 58.6; DB 1; Length 7
Local Similarity 1.3%; Pred. No. 2.7e-06;
es 4; Conservative 198; Mismatches 107; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ENGTH:
                                                               1372
                                                                                                                                                                                                                                                           1312
                                                                                                                                                                                            1432 YYYGTACCA 1440
                                                                                                                                                                                                                                                                                             127 TCTCCGAACAAACTTTATCCGGCGATCTTACCGTTTACCCGCTTTTAGCCCGGTGGGTCC 186
                             367 CGTGTTGCA 375
                                                                                                                                                                                                                                                                                                                                                            67 TTATTTTTTTTTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGTCT 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alexandria
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22313-0299
                                                                                                                            CTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGC 366
                                                                                                                                                            ACCGGAACCACCTCTTCACCACCCAAAACCCCACCGAGCAATCTCACGATGGTCTCGATCT 306
                                                                                                                                                                                                                          TCCCACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAACC 246
                                                               899149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7218 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (703)836-9300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EP 91 114 300.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US/08/232,463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/07/935,313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30472/114 IMMU
                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1; Length 7218;
                                                                                                                                                                                                                                                                                                                                                                                                 <u>.</u>.
                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
S
                                                                    밁
                                                                                                    S
                                                                                                                                        В
                                                                                                                                                                        Ś
                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-232-463-14/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-232-463-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 14, Application US/08232463 Patent No. 5670367
                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
LENGTH: 7218 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: EP 91 114 300.6
FILING DATE: 26-AUG-1991
ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET NUMBER: 30472/114 IMMU
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: DORNER, F.
APPLICANT: SCHEIFLINGER, F.
APPLICANT: FALKMER, F. G.
TITLE OF INVENTION: RECOMBINANT FOWLPOX VIRUS
NUMBER OF SEQUENCES: 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                          IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: nucleic acid
STRANDEDNESS: sing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
1392 AGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGT 1451
                                                                                                                                                                                                                                                                                                                   1332 GGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAG 1391
                                1512 GACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGA 1571
                                                                                                                                            1452 TCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCC 1511
                                                                                                                                                                                                                11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22313-0299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alexandria
: VA
                                                                                                                                                                                                                                                                                                                                                                                                                                           pTZgpt-F1s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           899149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3: Foley & Lardner
1800 Diagonal Road, Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (703)683-4109
                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (703)836-9300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  single
                                                                                                                                                                                                                                                                                                                                                                      2.7%; Score 48.8; DB 1; Length 7218; 2.6%; Pred. No. 0.0019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US/08/232,463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US/07/935,313
                                                                                                                                                                                                                                                                                                                                                         219; Mismatches 156; Indels
                                                                                                                                                                                                                                                                                                                                                           0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 8
                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-737-825-1
밁
                                                                                                                                                                                                                 US-08-737-825-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Appropriate Patent No. 587
                                                                                                                                            Matches 110;
                                                                                                                                                             Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                                                                                                             ORIGINAL SOURCE:
ORGANISM: Erwinia carotovora
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
SOFTWARE: MICROSOFT WORD97
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                     MOLECULE TYPE:
HYPOTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 205-8000
TELEFAX: (703) 205-8050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: SVENSSON, LEONARD R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                   ANTI-SENSE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: Birch, Stewart, Kolasch & Birch, LLP STREET: P.O. Box 747
CITY: Falls Church
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1632 TAAATGAAATTGGGAAATGTAGATGAATAATTTCTTCTATGTAGTTTAAGAAATTGAAA 1691
                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: (703)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/08/737,825
FILING DATE: 03-JUN-1997
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: SVENSSON, LEUR
REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE/DOCKET NUMBER: 1009-0105P
                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1088 REFERENCE 1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1692 ACAAAAATTATAATAAGAAATGG 1717
                                                                                                       1393 GTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTT 1452
                                1453 CAATGITAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCG 1512
                                                                       5675 GGTAGGCCAGCTTTACGGGTTGGGCGATCATATTACTTATTCGCTGCTGCAAACCGGTTT 5734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                22040-0747
                                                                                                                                                                                                                                                                                                                                                            nucleic acid
CCGCGTGTGCAAATACCTGCCTTACGGTCCGCTCGATAAGTCGTTGCCCTATTTACTCCG 5794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/08737825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Virginia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STEWART, GORDON SIDNEY ANDERSON BIRNIE
VENTION: GENES INVOLVED IN THE BIOSYNTHETIC PATHWAY OF CARBADENEM
                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SALMOND, GEORGE PEACOCK COPELAND MCGOWAN, SIMON JAMES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BYCROFT, BARRIE WALSHAM
WILLIAMS, PAUL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PORTER, LAUREN ELIZABETH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COX, ANTHONY RICHARD JOHN HOLDEN, MATTHEW THOMAS GEOFFREY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEBAIHIA,
                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                          DNA (genomic)
                                                                                                                                                                                                                                                                                                                                           single
                                                                                                                                                           51.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOHAMMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30,330
                                                                                                                                                                                                                                                                                                                                                                                                                  1:
                                                                                                                                        ; Score 48.2; DB 2; pred. No. 0.003; 0; Mismatches 103;
                                                                                                                                              103; Indels
                                                                                                                                                                               Length 8341;
                                                                                                                                              0
                                                                                                                                              Gaps
```

```
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; TYPE: DNA; ORGANISM: Aspergillus niger US-09-645-055-56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 9
US-09-645-055-56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
; ORGANISM: Aspergillus niger US-09-645-055-55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-645-055-55
                                                                                                                                                                                                                                                   APPLICANT: CLARITY BIOSCIENCES, INC.
APPLICANT: CLARITY BIOSCIENCES, INC.
APPLICANT: Honeycutt, Rhonda
APPLICANT: Honeycutt, Rhonda
APPLICANT: HOLESLAND, Michael
TITLE OF INVENTION: IDENTIFYING ORGANISMS BY DETECTING
TITLE OF INVENTION: INTRONIC NUCLEIC ACIDS OR ENCODED PROTEINS
FILE REFERENCE: 47540200100
CURRENT APPLICATION NUMBER: US/09/645,055
CURRENT FILING DATE: 2000-08-23
PRIOR APPLICATION NUMBER: US/09/645,055
CURRENT FILING DATE: 1999-08-25
PRIOR PILING DATE: 1999-08-25
NUMBER OF SEQ ID NOS: 59
CORTENADE DESCRIPTO FOR MICHAEL TO THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 56
LENGTH: 1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 56, Application US/09645055
Patent No. 6599701
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 84; Conservative
                                                                                                                                                                     SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 55, Application US/09645055 Patent No. 6599701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Honeyoutt, Rhonda
APPLICANT: Honeyoutt, Rhonda
APPLICANT: MCClelland, Michael
TITLE OF INVENTION: IDENTIFYING ORGANISMS BY DETECTING
TITLE OF INVENTION: INTRONIC NUCLEIC ACIDS OR ENCODED PROTEINS
FILE REFERENCE: 475402000100
CURRENT APPLICATION NUMBER: US/09/645,055
CURRENT FILING DATE: 2000-08-23
PRIOR APPLICATION NUMBER: US 60/150,977
PRIOR FILING DATE: 1999-08-25
NUMBER OF SEQ ID NOS: 59
PRIOR FILING DATE: 1999-08-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: CLARITY BIOSCIENCES, INC. APPLICANT: Honeycutt, Rhonda APPLICANT: McClelland, Michael
                                                                                            TYPE: DNA
                                                                                                                              LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5855 GAAGGAGTTGCTGCGCCGTCTCGTAGGAGGGAT 5887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1573 GATGGAACTTAAGAGGAGATTAATCGCCGGGAT 1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5795 CAĞGATTGAAĞAĞAACGCGGTTGCCTCĞĞCAACCTTCAAAAAĞGĞAAAATAAACTCTTĞCA 5854
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1513 ACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAG 1572
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1698 AATTATAATATAAGAAATGGAGTAGGTA 1725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1638 AAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAAATTGAAAACAAAA 1697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          787 CATTATTAACTAAAAATCTACTAGTTA 814
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         667 ATCTTTGTACTTTÄTTTAATGGAGGAÄTAGTCTCAAAACATÄGTGTGGATAATGTAAATG 726
                                                                                                                                   1481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AATTTAGAATAGGAGGATTAAAAAATTGTAAAAATATATTTCCCTATTTTGATACTTATA 786
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    56.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 45.6; DB 4; Length 1393; Pred. No. 0.0058;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             64; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
```

```
밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 11
US-10-204-708-40/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       멇
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
RESULT 12
US-08-487-826B-13
                                                                                                                                                                                 벍
                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-10-204-708-40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 40, Application US/10204708
Patent No. 6677731
GENERAL INFORMATION:
APPLICANT: OLEK, Alexander
APPLICANT: PIEPENBROCK, Christian
APPLICANT: BERLIN, Kurt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 98
SEQ ID NO 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 2.5%; Score 45.6; DB 4; Length 1481; Best Local Similarity 56.8%; Pred. No. 0.0061; Matches 84; Conservative 0; Mismatches 64; Indels 0
                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                              Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Diagnosis of Diseases Associated with DNA Replication TITLE OF INVENTION: by Assessing DNA Methylation FILE REFERENCE: 5013.1012 CURRENT PELICATION NUMBER: US/10/204,708 CURRENT FILING DATE: 2003-05-06 CURRENT RILING DATE: 2003-05-06 PRIOR APPLICATION NUMBER: PCT/EP01/03971
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: DE 10019173.8 PRIOR FILING DATE: 2000-04-07 PRIOR APPLICATION NUMBER: DE 10032529.7 PRIOR FILING DATE: 2000-06-30 PRIOR APPLICATION NUMBER: DE 10043826.1 PRIOR FILING DATE: 2000-09-01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR FILING DATE: 2001-04-06
PRIOR APPLICATION NUMBER: DE 10019058.8
PRIOR FILING DATE: 2000-04-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OTHER INFORMATION: chemically treated genomic DNA (Homo sapiens)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 19513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1638 AAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAAATTGAAAACAAAA 1697
                                                                                                                                                                                                                                                                            1698 AATTATAATATAAGAAATGGAGTAGGTA 1725
                                                                                           2900 AAAC 2897
                                                                                                                                                                                    2960 TTTTTTTTÄÄÄÄÄCÄÄÄÄTÄTTACCÄTCTTÄTCCAÄTCCAATCTTAAACTCCTAAACTC 2903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       817 CATTATTAACTAAAAAATCTACTAGTTA 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        697 ATCTTTGTÄCTTTÄTTTAATGGAGGAÄTAGTCTCAAAACATÄGTGTGGATAATGTÄÄÄTG 756
                                                                                                                                     142 TATC 145
                                                                                                                                                                                                                                82
                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AATTTAGAATAGGAGGATTAAAAATTGTAAAAATATATTTCCCTATTTTGATACTTATA 816
                                                                                                                                                                                                                                TTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCGTCTTCTCCGAACAAACTT 141
                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                           2.5%; Score 45.6; DB 4; Length 19513; 60.5%; Pred. No. 0.028;
                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                          49;
                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                          0,
                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                             0
```

Sequence 13, Application US/08487826B Patent No. 5993827 GENERAL INFORMATION: APPLICANT: Sim, Kim L. APPLICANT: Chitnis, Chetan

```
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                           US-08-307-499-51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-487-826B-13
                                                                         Sequence 51, Application US/08307499

Patent No. 5631972

GENERAL INFORMATION:
APPLICANT: Moyer, Richard W.
APPLICANT: Vi uela, Eladio
APPLICANT: Gibbs, E.P.J.
TITLE OF INVENTION: Use of Recombinant Swine Poxvirus as a
TITLE OF INVENTION: Live Vaccine Vector
NUMBER OF SEQUENCES: 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: Israelsen, Ned
REGISTRATION NUMBER: 29,655
REFERENCE/DOCKET NUMBER: NIH1
TELECOMMUNICATION INFORMATION:
TELEPAN: (619) 235-8550
TELEFAX: (619) 235-0176
INFORMATION FOR SEQ ID NO: 13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE:
HYPOTHETICAL: N
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 19124 base pairs
TYPE: nucleic acid
               CORRESPONDENCE ADDRESS:
ADDRESSEE: David R. Saliwanchik
STREET: 2421 N.W. 41st Street, Suite A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: BINDING DOMAINS FROM PLASMODIUM VIVAX
TITLE OF INVENTION: AND PLASMODIUM FALCIPARUM ERYTHROCYTE BINDING PROTEINS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE: 10-SEP-1993
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Match 2.3%; Score 42.6; DB 2; Length 19124; Local Similarity 53.3%; Fred. No. 0.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
TOPOLOGY: lin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: US/08/487,826B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                             5024 TATATAAAATGTTTATTTTATCTTAAAAAGGTTCCTATTATAACATTAA 5072
                                                                                                                                                                                                                                                                                                                                                                                                      1757 GAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTATATTCA 1805
                                                                                                                                                                                                                                                                                                                                                                                                                                                 4964 AAAAAACAAGAACAAAAATGGAAAGCATAAAAAATGTTACTGTAATAGGATAAAATATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1637 GAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAAATTGAAAACAAA 1696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ": 620 Newport Center Drive
Newport Beach
Californ's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92660
Gainesville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Miller, Louis H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Su, Xin-zhaun
Wellems, Thoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peterson, David S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Knobbe Martens Olson & Bear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Thomas E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches 79; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NIH121.001CP1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gape
```

```
Sequence 51, Application US/09299268
Patent No. 6217882
GENERAL INFORMATION:
APPLICANT: Moyer, Richard W.
APPLICANT: Vi uela, Eladio
APPLICANT: Vi uela, Eladio
APPLICANT: Of INVENTION: Use of Recombinant Swine Poxvirus as
ITILE OF INVENTION: Live Vaccine Vector
NUMBER OF SEQUENCES: 60
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                      US-09-299-268-51
                                                                                                                                                                                                                                                                               RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-307-499-51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 2.3%; Score 41.6; DB 1; Length 810; Best Local Similarity 49.1%; Pred. No. 0.061; Matches 110; Conservative 0; Mismatches 114; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 904-372-5800 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 810 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: UF35.1.FWCC1
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/342,212
FILING DATE: 21-APR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/307,499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Saliwanchik, David R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 29-JUN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRÍOR APPLICATION DATA:
APPLICATION NUMBER: US |
FILING DATE: 1-JUL-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STATE: Florida
ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1610 TAAAGAGAGTATGGAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTC 1669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1670 TATGTAGTTTAAGAAATTGAAAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAA 1729
                                                                                                                                                                                                                                                                                                                                                                                                1790 CACAAATGTATATTCACCTTATCAATAAAAATGCTTTTTACTTT 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1730 CATTTCCTGTGGCTAAATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATT 1789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             447 TACAGTGGTTAGATTAAGAATAGACGAAAGTATAAATCTATAAAAATTGTATTAATGAT 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                507 TGTTGTATGTTCTCTAATATGTTGGATTCCGCTCTATATCGTTCTAATGATAGCGACGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       387 TATATTGGGATTCCTGATACCTATAATCATATTCGTATATTGCTATTATAGAATTTTTTC 446
                                                                                                                                                                                                                                                                                                                                                     567 TGTTAGCTTATATACATCTAATATATTTAGACATCTGTGCCTCT 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          32606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      904-372-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            904-375-8100
David R. Saliwanchik
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-JUN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US 07/908,630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US 07/908,241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  51:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
```

```
RESULT 15
US-08-307-499-1/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; TOPOLOGY: unknown ; MOLECULE TYPE: DNA (genomic) US-09-299-268-51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                          Sequence 1, Application US/08307499
Patent No. 5651972
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
INERAL INFORMATION:
APPLICANT: Moyer, Richard W.
APPLICANT: Vi uela, Eladio
APPLICANT: Gibbs, E.P.J.
TITLE OF INVENTION: Use of Recombinant Swine Poxvirus as a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION: TELEPHONE: 904-375-8100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/908,630
FILING DATE: 29-JUN-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              y Match 2.3%; Score 41.6; DB 3; Length 810; Local Similarity 49.1%; Pred. No. 0.061; hes 110; Conservative 0; Mismatches 114; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
CITY: G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 810 base pairs TYPE: nucleic acid STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Saliwanchik, David R.
REGISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: UF35.1.FWCC1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 2
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US 07/908,241 FILING DATE: 1-JUL-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/09/299,268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1610 ТАРАВ САСТАТ ТОВ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕТЕТ ТЕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1790 CACAAATGTATATTCACCTTATCAATAAAAATGCTTTTTACTTT 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1730 CATTTCCTGTGGCTAAATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATT 1789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1670 TATGTAGTTTAAGAAATTGAAAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAA 1729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  387 TATATTGGGATTCCTGATACCTATAATCATATTCGTATATTGCTATTATAGAATTTTTTTC 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    567 TGTTAGCTTATATACATCTAATATATTTAGACATCTGTGCCTCT 610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                507 TGTTGTATGTTCTCTAATATGTTGGATTCCGCTCTATATCGTTCTAATGATAGCGACGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           447 TACAGTGGTTAGATTAAGAAATAGACGAAAGTATAAATCTATAAAAATTGTATTAATGAT 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gainesville
Florida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2421 N.W. 41st Street, Suite A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                904-372-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        21-APR-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US 07/342,212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                08/901,127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
```

```
Ś
                                                                                                                                                                                                       8
                                                                                                                                                                                                                                                                                                                                                                                                                                                ; LOCATION:
US-08-307-499-1
                                                                                                                                                                                                                                                                               Query Match 2.3%; Score 41.6; DB 1; Length 14176; Best Local Similarity 49.1%; Pred. No. 0.33; Matches 110; Conservative 0; Mismatches 114; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 904-372-5800
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 14176 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: UF35.1.FWCC1
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION: NAME: Saliwanchik, David R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/908,630
FILING DATE: 29-UTW-1992
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/342,212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/307,499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: COMPATIBLE
COMPUTER: COMPATIBLE
COMPUTER: COMPATIBLE
COMPUTER: COMPATIBLE
COMPUTER: COMPATIBLE
COMPATIBLE
COMPUTER: COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBLE
COMPATIBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: Live Vaccine Vector NUMBER OF SEQUENCES: 60 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/908,241
FILING DATE: 1-JUL-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 2421 N.W. CITY: Gainesville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 2:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KBY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE:
1670 TATGTAGTTTAAGAAATTGAAAAAAATTATAAATATAAGAAATGGAGTAGGTAAGAA 1729
                                                                                                                                   1820 TATATTGGGATTCCTGATACCTATATCATATTCGTATATTGCTATTATAGAATTTTTTC 1761
                                                                                                                                                                                                           1610 TAAAGAGAGAGTATGGAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTC 1669
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Florida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    B: David R. Saliwanchik
2421 N.W. 41st Street, Suite A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    904-372-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         unknown
E: DNA (genomic)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3852..4226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10148..10513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
5131..5310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
6786..7130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
5760..5912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4585..4887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sab
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           904-375-8100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21-APR-1992
                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                Gaps
```

Search	מם	δ	₽ D	Ş	מַם	
Search completed: March 10, 2004, 12:07:08	1640 TGTTÄGCTTÄTÄTÄTÄTÄTÄTÄTTTÄGÄCATCTGTGCCTCT 1597	1790 CACAAATGTATATCACCTTATCAATAAAATGCTTTTTACTTT 1833	1700 TGTTGTATGTTCTCTAATATGTTGGATTCCGCTCTATATCGTTCTAATGATAGCGACGAT 1641	1730 CATTTCCTGTGGCTAAATATTTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATT 1789	1760 TACAGTGGTTAGATTAAGAAATAGACGAAAGTATAAAATCTATAAAAATTGTATTAATGAT 1701	

GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.

```
Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2421054 seqs, 1828716029 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-10-026-767-3
1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  March 10, 2004, 10:27:40 ; Search time 598.434 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 agcgtttagaaaaaacagc.....ataaaaatgctttttacttt 1833
                                                                                                                                                                                                                                                                                                        10:
: /cgn2_6/ptodata/1/pubpna/USO7_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/POT_NEW_PUB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO6_NEW_PUB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO6_NEW_PUB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO6_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO7_NEW_PUB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO9_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO9_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO9_RWM_PUB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO8_PUBCOMB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO8_NEW_PUB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO8_NEW_PUB.seq:*
: /cgn2_6/ptodata/1/pubpna/USO8_NEW_PUB.seq:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Published_Applications_NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (without alignments)
11202.698 Million cell updates/sec
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

14 119	C2T CT		12 123	c 11 125	10 1	9 1	8 158.6	7 294		C 5 438.4	4 1280.6	3 1457.8	2 1457.8	1 1833	Result No. Score
. 4 Оп. го	.4 6.5	O	6	œ	51 8.2		.6 8.7					.8 79.5		33 100.0) 1
121	121	2240	1494	609	2000	2000	806	2000	1001	475	1339	1461	1461	1833	Query Match Length
15	15	13	13	12	11	9	12	12	12	9	9	1	ø	14	B
US-10-307-005-990	US-10-307-005-989	US-10-119-635-7	US-10-119-635-3	US-10-424-599-27121	US-09-938-842A-4104	US-09-938-842A-4104	US-10-424-599-30413	US-10-424-599-91151	US-10-424-599-116395	US-09-770-444-56	US-09-770-445-11	US-09-938-842A-1411	US-09-938-842A-1411	US-10-026-767-3	ID
Seguence 990. App	Sequence 989, App	Sequence 7, Appli	Sequence 3, Appli	Sequence 27121, A	Sequence 4104, Ap	Sequence 4104, Ap	Sequence 30413, A	Sequence 91151, A	Sequence 116395,	Sequence 56, Appl	Sequence 11, Appl	Sequence 1411, Ap	Sequence 1411, Ap	Sequence 3, Appli	Description

Query Match

100.0%; Score 1833;

DB 14;

Length 1833;

00000	0 0 0	0 0	ο ο	0 0 0
14444 10040		ωωωω αω4ωω	3322222 47654 10987	116 117 119 119 220 221
4.4. 4.4.4. 4.4.4.0 0.00		57.53 53.4 54.4 64.4 66.6	117.8 1111.4 1107.2 1107.2 105.8 89.2 80.8	119.4 119.4 119.4 1119.4 1119.4 1119.4 1117.8
ហហហហ	,,,,,,,,,,	7.6.1.2	00000446044044004164164164164164164164164164164164164164	
139257 6112 14649 14649	19513 19513	465 413 433 3673778	780 2389 2565 435 567	121 121 121 121 121 121 121
1111	111111	4.		155 155 155 155 155 155 155 155 155 155
US-09-920-671-11 US-09-920-671-11 US-10-311-455-636 US-10-239-676-121 US-10-240-453-141	-10-240-485-179 -10-240-453-263 -10-221-613-206 -10-204-708-40	-09-918-995-2291 09-960-352-14086 09-917-800A-231 S-10-312-841-1	0000000	US-10-307-005-997 US-10-307-005-998 US-10-307-005-1001 US-10-307-005-1005 US-10-307-005-1006 US-10-307-005-993 US-10-307-005-994
יע. דייר ביני	nonona	Sequence 2291, Ap Sequence 14086, A Sequence 231, App Sequence 1, Appli	e 3041 e 1156 e 1, A e 9, A e 285, e 6235 e 1038 e 1038	Sequence 997, App Sequence 1988, App Sequence 1001, Ap Sequence 1005, Ap Sequence 1006, Ap Sequence 993, App Sequence 994, App

ALIGNMENTS

RESULT 1

US-10-026-767-3

```
Sequence 3, Application US/10026767
Publication No. US20030014774A1
GEBREAL INFORMATION:
APPLICANT: Hitachi, LTD.
APPLICANT: Hitachi, LTD.
APPLICANT: Hitachi, LTD.
APPLICANT: Hitachi, LTD.
APPLICANT: Japan International Research Center for Agricultural Science
APPLICANT: Japan International Research Advancement Institute (BRAIN)
ITILE OF INVENTION: Transgenic rice plant and its family with environmental
ITILE OF INVENTION: stress resistant by proline accumulation of high level and its
ITILE OF INVENTION: production.
FILE REFERENCE: NYOLP0353
CURRENT APPLICATION NUMBER: US/10/026,767

NUMBER OF SEQ ID NOS: 3
ILENGTH: 1833
TTYPE: DNA
CORALISM: Arabidopsis thaliana
FEATURE:
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
NAME/KEY: CDS
LOCATION: 113...1612
N
```

	1080	1021 CAATGCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGAGA	, 8
		961 GGAAGACACAATCCTCCAACCCGCGATTGATTACATGGCTTATTCATCGGCGATCATGTT	DЬ
	1020	961 GGAAGACAATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTT	Ş
	960	901 AAGGATTCAAGAAATCTGTAGGAAATGCCAAGAGTCCAATGTACCATTGTTGATTGA	유 성
	0	841 AAACTCAGAACCGGAACCGTTAACCGCGGAAGAAGGGGAGGTCGAAGCAGCTCATGG	рb
	900	_ဌ	Ş
	840	81	당 .
	840	781 ACTOTOATGGAAGOTOAAATOGTTTTOOGGTTTTOTOGGAATGGAGTCCTCTGTAGCAGAG	\$
	780	721 TAGTCTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTCAA 	B 성
	720	661 ATCTTTACCAACATCTCACTTTAGCTCAGTTGTGAAGATAACTGCCATTTGTCCAAT	Дb
-	720	661 ATCTITACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAAT	Ş
	660	601 TGACGCTGTATCTTGTGATGATAACATGCAACAATTCATTC	당 성
	6 0 6 0	4.	당
	600	541 AAGCGTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGA	Ş
	540	481 TACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAG	В
	540	481 TACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAG	S
	8	421 GAGCTCTAAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAAG	문 5
	co t	ANA KARTEDETSKORKELIMENDER OPDETSON FRANKRIKAN AFRAMARIEN I 1918 ON SAKKENTARIAKAN SAKKEN 1918 ON SAKKEN 1918 O	5 8
	4 2 0	361 CACCGCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTCGTCAT	. S
	360	301 CGATCTCTCCGATCAAGCCCGTCTTTTCTCTCTCTATCCCAACCTCTGATCTCCTCCGTTC	뮹
	360	301 CGATCTCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCCCTCCGTTC	8
	300	241 ACAAGCACCGGAACCACCTCTTCACCACCCAAAACCCACCGAGCAATCTCACGATGGTCT 241 ACAAGCACCGGAACCACCTCTTCACCACCCAAAACCCACCGAGCAATCTCACGATGGTCT	ρ δ
	4 0	18	망
	-4.	181 GGGTCCTCCCACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCCTTTGGACA	8
	180	121 CCGTCTTCTCCGAACAAACTTTATCCGGCGATCTTACCGTTTTACCCGCTTTTAGCCCGGT	В
	180	121 CCGTCTTCTCCGAACAAACTTTATCCGGCGATCTTACCGGTTTACCCGCTTTTAGCCCGGT	8
	120	61 GAGAAATTATTTTTTTTGTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAAC	유 성
	0	1 AGCGTTTRAGARARARACAGCGATARARACCGARACATCRAGCARACRARARARARARARARARARARARARARARAR	₽ D
	60	1 AGCGTTTAGAAAAAAAAAACAGCGATAAAACCGAAACAACCAAACAAA	8
	0,	Best Local Similarity 100.0%; Pred. No. 0; Matches 1833; Conservative 0; Mismatches 0; Indels 0; Gaps	Ма Ве

RESULT	Дb	Ş	Db	Q	Дb	Q	В	γQ	В	γQ	ф	Ş	ğ	ş	DЬ	Ą	В	ğ	b	Ş	뮹	γQ	В	Q	DЬ	Ş	Db
SSULT 2	1801	y 1801 ATTCACCTTATCAATAAAATGCTTTTTACTTT 1833	1741	Y 1741 GCTAPATATTTTTCATGAGGGACTATGTTTTTACTATCATATATCATTCACAAATGTAT	1681	7 1681 AGAAATTGAAAAACAAAAATTATAATATAAGAAATGGAGTAAGGAACATTTCCTGTG	1621	/ 1621 TATGGAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTA	1561	1561 TCAACTCATGAGGATGGAACTTAAGAGGAGATTAATCGCCGGGATTGCGTAAAGAGAGAG	1501	1501 GTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGACCG	1441	, 1441 GAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATAC	1381	1381 CGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTTCCGGTTAAA	1321	1321	1261	1261 ATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAA	1201 CAAGTCGCCAGTCCACGACACAATTCAGGATACTCACTCTTGT	1201 CAAGTCGCCAGTCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGAC	1141 CAAGTTGGTGAGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTG	1141	1081 CGGTGAGAGACTGCATTTGGCAGTACAAATGCTGAGAAAGAG	1081 CGGTGAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAGATGTTCCTATGGGGTT	1021 CAATGCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGC
			ATATCATTCACAAATGTAT 1800	ATATCATTCACAAATGTAT 1800	GGTAAGAACATTTCCTGTG 1740	174	ATTTCTTCTATGTAGTTTA 1680	16	GGATTGCGTAAAGAGAGAG 1620		ccaccegaecrcareacce 1560	CCACCGGAGCTCATGACCG 1560	ccercecaaccecraracc 1500	CCGTCGCAACCGCTATACC 1500	carrerectreeserraaa 1440	CATTGTCCTTCGGGTTAAA 1440	TCGGGATCGATAAACAGAA 1380	TCGGGATCGATAAACAGAA 1380	redrieredeakeataa 1320	TCGTTCTCGCAACACATAA 1320	GTTACAATGATTGTATGAC 1260	GTTACAATGATTGTATGAC 1260	redeedarreeries 1200	TGGCGGATTCCCTGGGTTG 1200	AGAATGTTCCTATGGGGGTT 1140		AGGCGTACTTGAGAGACGC 1080

US-09-93-842A-1411
US-09-938-842A-1411
Sequence 1411, Application US/09938842A
; Patent No. US20020160378A1
; GENERAL INFORMATION:
APPLICANT: Kreps, Joel
APPLICANT: Wang, Xun
APPLICANT: Wang, Xun
APPLICANT: WANG, AND METHODS OF PLANTS, TRANSGENIC PLANTS CONTAINING;
TITLE OF INVENTION: SAME, AND METHODS OF USE
FILE REFERENCE: SCRIF1300-3
; CURRENT APPLICATION NUMBER: US/09/938,842A
; CURRENT APPLICATION NUMBER: US/09/938,842A
; PRIOR APPLICATION NUMBER: US 60/227,866
; PRIOR APPLICATION NUMBER: US 60/264,647
; PRIOR APPLICATION NUMBER: US 60/264,647
; PRIOR FILING DATE: 2001-01-16

```
밁
                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            吊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                      S
                                                               밁
                                                                                                 Ś
                                                                                                                                  В
                                                                                                                                                                δ
                                                                                                                                                                                                       ₽,
                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-938-842A-1411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION NUMBER: US 60/300,111
PRIOR FILING DATE: 2001-06-22
NUMBER OF SEQ ID NOS: 5379
SEQ ID NO 1411
LENGTH: 1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity Matches 1459; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Arabidopsis thalians
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: DNA
                               992
                                                                                                                                                                                                                                                                                109
                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                       481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  512 GATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAAAGGG 571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241 CCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        212 GTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACCGGAACCACCTCTTCACCACCCA 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    152 TCTTACCGGTTTACCCGGCTTTTAGCCCGGTGGGTCCTCCCACCGTGACTGCTTCCACCGCC 211
                                                                                                                                      721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 GTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACCGGAACCACCTCTTCACCACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 TOTTACCOTTTACCCGCTTTTAGCCCGGTGGTCCTCCCACCGTGACTGCTTCCACCGCC
GAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGCCAA
                                                                                                                                                                  GRAGRARGGGRGCTCGRAGCRGCTCRTGGRARGGRTTCRAGRARTCTGTRGGRARATGCCRA 931
                                                                                                                                                                                                                                                                                                            CGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCGGTT
                                                                                                                                                                                                                                                                                                                                                   GTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTG
                                                                                                                                                                                                                                                                                                                                                                              GTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                       CAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACATGCAA 631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTATGACCATTTTTTGCGCCCGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGTGGCAIGGTTTTAGGGCTTGTGAAAAGTACGTTTTATGACCATTTTTTGCGCCGGTGAA 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGT 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAACCCACCGAGCAATCTCACGATGGTCTCGATCTCTCCGATCAAGCCCGTCTTTTCTCC 331
                                                                 TTCTCCGAATCGAGTCCTCTACCACACAAACTCAGAACCGGAACCGTTAACCGCGGAA
                                                                                                                                                                                                                                           TTCTCCGAATCGAGTCCTCTCTACCACACACACACACCGGAACCGGTAACCGCGGAA 871
                                                                                                                                                                                                                                                                              CGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            79.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 1457.8;
Pred. No. 0;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1461;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                  811
                                                                                                                                                                                                                                                                                                                                                                                     751
                                                                                                                                                                                                                                                                                                                                                                                                                                                          691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            60
                                                                                                                                                                                                                                                                                                                                                                                                                       540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   180
                                                                   840
                                                                                                                                                                                                                                                                              660
                                                                                                                                                                                                                                                                                                                                                   600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 420
```

```
APPLICANT: Wang, Xun
APPLICANT: Zhu, Tong
TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
FILE OF INVENTION: STRESS-REGULATED GENES OF PLANTS
FILE OF INVENTION: SAME, AND METHODS OF USE
FILE REFERENCE: SCRIP1300-3
CURRENT APPLICATION NUMBER: US/09/938,842A
CURRENT FILING DATE: 2001-08-24
PRIOR APPLICATION NUMBER: US 60/227,866
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/300,111
PRIOR FILING DATE: 2001-06-22
NUMBER OF SEQ ID NOS: 5379
SEQ ID NO 1411
LENGTH: 1461
TYPE: DNA
OCCAPAZE-A42A-1411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 3
US-09-938-842A-1411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                               US-09-938-842A-1411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Sequence 1411, Application US/09938842A ; Publication No. US20040009476A9 ; GENERAL INFORMATION:
Query Match 79.5%; Score 1457.8; Best Local Similarity 99.9%; Pred. No. 0; Matches 1459; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Harper, Jeff APPLICANT: Kreps, Joel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1592 TTAATCGCCGGGATTGCGTAA 1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1441 TTAATCGCCGGGATTGCGTAA 1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1052 AACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAAT 1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901 ÁACACGATTCÁGGCGTÁCTTGÁGAGAGACGCCGGTGÁGAGACTGCATTTGGCAGTACAAAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGTCTAGC 1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGA 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GAACGTAGCTTGGCGGATTCCCCTGGGTTGCAAGTCGCCAGTCCACCGACACACTTCAGGAT 1231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGTCTAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAA 1351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GAAGCTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACAATTCAGGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kreps,
                                                DB 11; Length 1461;
    2; Indels
       0
       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1291
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1260
       0;
```

Ś

152 TCTTACCGTTTACCCGCTTTTAGCCCGGTGGGTCCTCCCACCGTGACTGCTTCCACCGCC 211

```
1112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          692
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                512
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    212
                                                                                                                                                                                                                  106
                                                                                                                                                                                                                                                                                                841
                                                                                                                                                                                                                                                                                                                                      992
                                                                                                                                                                                                                                                                                                                                                                              781
                                                                                                                                                                                                                                                                                                                                                                                                                  932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            752
                                                                                                                                                                                                                                                                                                                                                                                                                                                          721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              872 GAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGT 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAACCCACCGAGCAATCTCACGATGGTCTCGGATCTCTCCGATCAAGCCCGTCTTTTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACCGGAACCACCTCTTCACCACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACCGGAACCACCTCTTCACCACCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGCCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTGACG 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAACCCACCGAGCAÁTCTCACGATGGTCTCGATCTCTCCGATCAAGCCCGTCTTTTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGTGGCATGGTTTTAGGGCCTTGTGAAAAGTACGTTTTATGACCATTTTTGCGCCGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTTATGACCATTTTTTGCGCCCGGTGAA 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGT
                                                                                    GAACGTAGCTTGGCGGATTCCCTGGGGTTGCAAGTCGCCAGTCCACGACACAATTCAGGAT
                                                                                                                                                                                                                                                                                                                                                                                                        TTCTCCGAATCGAGTCCTCTCTACCACACACACAGAACCGGAACCGTTAACCGCGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCTCCGAATCGAGTCCTCTACCACACACACAAACTCAGAACCGGAACCGTTAACCGCGAA
                     ACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCT
                                                        GAAGCTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACAATTCAGGAT
                                                                                                                                      GCTGAGAAAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGCTTACATGTCTAGC
                                                                                                                                                                            GCTGAGAAAAGAGATGTTCCTATGGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGTCTAGC
                                                                                                                                                                                                                  AACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAAT
                                                                                                                                                                                                                                                          AACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAAT
                                                                                                                                                                                                                                                                                                TACATEGETTATTCATCEGEGATCATETTCAATECTGACAAAGACCGACCAATCGTTTAC 1051
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCGGTT
331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          60
                       1291
                                                           1080
                                                                                                1231
                                                                                                                                         1020
                                                                                                                                                                                                                                                          1111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                180
                                                                                                                                                                                                                    960
                                                                                                                                                                                                                                                                                                                                                                              840
                                                                                                                                                                                                                                                                                                                                                                                                                      991
                                                                                                                                                                                                                                                                                                                                                                                                                                                            780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            811
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          751
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
```

Ś

44;

Indels

0

Gaps

0

밁 Ś 밁 Š 밁 Ś

밁 8 밁 Ś 맑 Ś 밁 5 ß S 밁 Ś 맑 5 밁 Š 밁 8 딿 δ 밁 á 문 Ś 뭐 S 밁 Ś

```
APPLICANT: HOEfman, Neil
APPLICANT: Hurban, Patrick
ITITLE OF INVENTION: Expressed Sequences of Arabidopsis
ITITLE OF INVENTION: thallana
ITITLE OF INVENTION: thallana
ITITLE OF INVENTION: USARA-012PRV)
CURRENT APPLICATION NUMBER: US/09/770, 445
CURRENT FILING DATE: 2001-01-26
PRIOR APPLICATION NUMBER: US 60/178,472
PRIOR FILING DATE: 2000-01-27
INUMBER OF SEQ ID NOS: 999
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 11
LENGTH: 1339
TYPE: DNA
ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: GOTLACH,
APPLICANT: Hamilton,
APPLICANT: Price, Je
APPLICANT: Price, Je
APPLICANT: Rameaka
APPLICANT: Rameaka
APPLICANT: Rameaka
APPLICANT: Matthew,
APPLICANT: Matthew,
APPLICANT: Heas, Wil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-770-445-11
                                                                                               US-09-770-445-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 11, Application US/09770445
Patent No. US20020023281A1
Query Match 69.9%; Score 1280.6; Best Local Similarity 96.7%; Pred. No. 0; Matches 1295; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
APPLICANT:
                                                                                                                 PEATURE: NAME/Ket: misc_feature LOCATION: (1)...(1339)
OTHER INFORMATION: n = A,T,C or G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1441 TTAATCGCCGGGATTGCGTAA 1461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1292 GETTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAA 1351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1081 ACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCT 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGTTTCGGTGTCGTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAA 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGA 1591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matthew, Abraham V.
Ledford, Brooke L.
Woessner, Jeffrey P.
Haas, William David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTAATCGCCGGGATTGCGTAA 1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTTGCACAGCTATATGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Garcia, Carlos A.
Kricker, Maja
Slader, Ted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Davis, Keith R.
Allen, Keith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hamilton, Carol M.
Price, Jennifer L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yu, Yang
Rameaka, Joshua G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 An, Yong-Qiang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gorlach, Jorn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Page, Amy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Tracy M.
                                                  DB 9;
                                                    Length 1339;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1531
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1440
```

1371 1021		1251 901	1191 841	1131 781	1071	1011	951	891 541	831 481	771 421	711 361	51		531 181	471 121	411 61	351 1
ATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCT	CAACACATAACGCTGATTCGGGGAGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCG	ATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCCGGTGTCTCTCG	CCCTGGGTTGCAAGTCGCCAGTCCACGACACAATTCAGGATACTCACTC	CTATGGGGTTCAAGTTGGTGAQAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATT	TGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAAATGTTC	CGATCATGTTCAATGCTGACAAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACT	TGATTGATGCGGAAGACACAATCCTCCAACCCGCGATCGAT	CAGCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGCCAAGAGTCCAATGTACCATTGT	TCTACCACACAAACTCAGAACCGGAACCGTTAACCGCGGAAGAAGAAAGA	CGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCGGTTTTCTCCGAATCGAGTCCTC	TTTGTCCAATTAGTCTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTC	AAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCA	AACACGCCGATGACGCTGTATCTTGTGATGATAACATGCAACAATTCATTC	agcgcgtgagaagcgtttatgaagctactggtcttaaagggatgcttgtctatggcgtcg 	TIGTGAAAAGTACGITTTAIGACCAITTTIGCGCCGGTGAAGATGCCGACGCAGCCGCIG	CGTGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGC	TCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGA
1430 1080	1370 1020	1310 960	1250 900	1190 840	1130 780	1070 720	1010	950	890 540	830 480	770 420	710 360	650	590 240	180	4 70 1 20	410

吊

밁

음 성 음

당 상

Ś

중 음 중 음

ş

밁

В

Ś

```
APPLICANT: Hoffman, Neil
APPLICANT: Hurban, Patrick
TITLE OF INVENTION: Expressed Sequences of Arabidopsis
TITLE OF INVENTION: thaliana
FILE REFERENCE: 2027 (PARA-016PRV)
CURRENT APPLICATION NUMBER: US/09/770,444
CURRENT FILING DATE: 2001-01-26
PRIOR APPLICATION NUMBER: 60/178,502
PRIOR APPLICATION NUMBER: 60/178,502
PRIOR FILING DATE: 2000-01-27
NUMBER OF SEQ ID NOS: 999
SOFTMARE: FastSEQ for Windows Version 4.0
SEQ ID NO 56
Ś
                                      밁
                                                                              8
                                                                                                                           용
                                                                                                                                                             8
                                                                                                                                                                                                                                                                                              ; TYPE: DNA
; ORGANISM: Arabidopsis thaliana
US-09-770-444-56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                유정
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 5
US-09-770-444-56/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 56, Application US/09770444
Patent No. US20020023280A1
                                                                                                                                                                                                        Query Match 23.9%; Score 438.4; DB 9; Length 475; Best Local Similarity 96.6%; Pred. No. 1.8e-103; Matches 460; Conservative 0; Mismatches 11; Indels 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Gorlach, Jorn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PPLICANT:
                                                                                                                                                                                                                                                                                                                                                             LENGTH: 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1431 TCGGGTTAAAGAGAGAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAA 1490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1491 CCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCCACCGGAG 1550
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1081 NCGNNNTNNNGAGAGCANNNNNNAATGTNAGCAAGTACATGNNGTTTGGACCCGTCGCAA 1140
                                          418 Tritchitricerritchaaaaacaaaactitigaattitateecaacccerctict 359
130 CCGAACAAACTTTATCCGGCGATCTTACCGTTTACCCGCTTTTAGCCCGGTGGGTCCTCC 189
                                                                                                                              70
                                                                                                                                                                    10 АДАДАДАСАСССЯТАЛАЛАСССВАЛАСАТСЛАССАЛАСАЛАЛАЛАЛАЛАДАСАСАЛАСТТА 69
                                                                 TITTITITITITICGITITICAAAAACAAAATCITIGAATITITAIGGCAACCCGICTICI 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATGTAGTTTAAGAAATTGA 1689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             An, Yong-Qiang
Hamilton, Carol M.
Price, Jennifer L.
Raines, Tracy M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATGTAGTTTAAGAAATTGA 1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAGAGAGAATATGGAGCCATNAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCT 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAAGAGAGAGTATGGAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGATTAATCGCCGGGATTGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGATTAATCGCCGGGATTGCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matthew, Abraham V.
Ledford, Brooke L.
Woessner, Jeffrey P.
Haas, William David
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Slader, Ted
Davis, Keith R.
Allen, Keith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Garcia, Carlos A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yu, Yang
Rameaka, Joshua G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kricker, Maja
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Page, Amy
                                                                                                                                                                                                                 <u>ნ</u>
                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1200
```

478

595

535

```
멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 6
US-10-424-599-116395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                     Ś
                                                                   밁
                                                                                                            Ś
                                                                                                                                                             밁
                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                     ₽,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-10-424-599-116395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement FILE REFERENCE: 38-21(53223)B CURRENT APPLICATION NUMBER: US/10/424,599 CURRENT FILING DATE: 2003-04-28 NUMBER OF SEQ ID NOS: 285684 SEQ ID NO 116395 LENGTH: 1001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 116395, Application US/10424599
Publication No. US20040031072A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: La Rosa Thomas J
APPLICANT: Kovalic David K
APPLICANT: Zhou Yihua
APPLICANT: Cao Yongwei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION: Clone ID: PAT_MRT3847_76115C.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
1062 AGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAATGCTGAGAAAG 1121
                                                                                                               370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      358
                                                                   242 ACTOCTOTGCCATOTTGCACAA---CAAAGGTGACAACCCCATTGTGTTTGGGACCATGC
                                                                                                                                                             182
                                                                                                                                                                                                         122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      430
                                                                                                                                                                                                                                                                                                882 AGCTCGAAGCAGCTCATGGAAGGATTCAAGAAATCTGTAGGAAATGCCAAGAGTCCAATG 941
                                                                                                                                                                                                                                                                                                                                                                                    822 CGAGTCCTCTCTACCACACAAACTCAGAACCGGAACCGTTAACCGCGGAAGAAGAAGAAAGGG 881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                762 ACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCGGTTTTCTCCGAAT 821
                                                                                                                                                                                                                                                                                                                                              62 CAAGCCCTTTGTACCACACAAGCAACAAACCCGAGCCTCTTACCCCAGAGGAAGAAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             58
                                                                                                                                                                                                                                                                                                                                                                                                                                     2 ACAAGGACCCTTGTTTCAGTTTGCCATGGAAGCAAGATTGCTTCCCCCATATTCTCCGAGT 61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGT 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GTTGCATGCGGCGGTAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GITGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAA 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGAACCACCTCTTCACCACCAAAAACCCCACTGAGCAATCTCACGATGGTCTCGATCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GGAACCACCTCTTCACCACCCAAAACCCCACCGAGCAATCTCACGATGGTCTCGATCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CCGAACAACTTTATCCGGCGATCTCACCGTTTACCCGCTTTTAGCCCGGTGGGTCCTCC
                                                                                                                                                                                                                                                    ACCTTCAACTTGCCATCCAGAGATTCCATGAGCTTTGCCATAAGTGTGTGCAAGTCAACA 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACTTATGGACGCTTTCGTGACGCGTGGCATGGTTTTTAGGGCTTGTGAAAAGTACCT
                                                                                                                                                          TTCCTTTGTTGGTTGATGCAGAACACACTTCTGTTCAACCTGCTATTGACTACTTCACAT 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 315.2; DB 12; Length 1001; Pred. No. 3.1e-71;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 308; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               <u>ب.</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        299
                                                                        298
                                                                                                                                                                                                                                                                                                                                                121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                       Ś
                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
       밁
                                                                                            皮
                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-10-424-599-91151
                                              Ś
                                                                                                                                                                                                                                                                                                                                                                           US-10-424-599-91151
                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: La Rosa Thomas J
APPLICANT: Kovalic David K
APPLICANT: Kovalic David K
APPLICANT: Chou Yihua
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REPERENCE: 38-21(5323)B
CURRENT APPLICATION NUMBER: US/10/424,599
CURRENT APPLICATION NUMBER: US/10/424,599
CURRENT FILLING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 91151
LENGTH: 2000
TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 91151, Application US/10424599
Publication No. US20040031072A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                            Matches 834; Conservative
                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                         OTHER INFORMATION: Clone ID: PAT_MRT3847_5331C.1
                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Glycine max FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1482 CCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGTTATGAGAACCGGGGAATGATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1122 AGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGTCTAGCGAACGTAGCT 1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1542 CCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGGAGATTAATCGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1422 CATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1362 TCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                419
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    359 TGGGAATCCCAATGGGCTTCAAACTTGTCAGGGGTGCTTATATGTCAAGTGAAACAAAAT 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                716 CAGTGGAGACTGTTATGCCATATCTCTTAAGAAGGGCTGAAGAGAATAGAGGAATGTTGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            656 CACTTTCCTTTGGTTTGAGCAATGCAGGATTTCAGGTGAGCAAGTATATGCCATTTGGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        596 TAGGGÁTTGGAÁAGGTGÁACCACAAGCTTGAATTTGCACAGCTTCATGGAATGTCAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           776 CIGCTICGGGCTTTGACAGGCAACTGATGAGGAAGGAGTTGGGAAGGAGACTAAAAGCTG
                                                  212 GTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACCGGAACCACCTCTTCACCACCCA 271
                                                                                                210 CTCCGTTACAACACAACCAAGCCACTCAACGCTGCCCACCCCTCAATCTCTCCAGTC
                                                                                                                                                                                        150 AAAAAACTTCCGAGAGTTTAATGGCAACACGCGTGATCCCTCCAAGAATCCTCAAGAAG 209
                                                                                                                                                                                                                                   92 AAAACAAAATCTTTGAATTTTATGGCAACCCGTCTTCTCCGAACAAACTTTATCCGGCGA 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCGTTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACC 1361
       ATCGCCCCACCGTCACTCTTCGAGAGGTCGCCGTCCCCTGTCGCGGATGCTGTTTCAACA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTGTTCTTGCAACTCATAATGTTGAGTCAGGGAAACTGGCTGCCAAAAGCACATGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCTTCAATGACTGCTCCTCTTTCATGCTTGAGAAGGTTGCTAATGGCCCCTGGT---GGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTG 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCTTACCGTTTACCCGCTTTTAGCCCGGTGGGTCCTCCCACCGTGACTGCTTCCACCGCC 211
                                                                                                                                                                                                                                                                                                     16.1%;
                                                                                                                                                                                                                                                                               0; Mismatches 797; Indels
                                                                                                                                                                                                                                                                                                     Score 294.8; DB 12; Length 2000; Pred. No. 9.4e-66;
```

1601

775

835

1541 715 1481 655 1421

11; Gaps

5

329

```
1343 CGGTTCAATTTCAGTTGTTCTTGCAACTCACAATATTGAATCAGGGAAATTGGCTGCAGC 1402
                                                                         1291 TGGTT---TCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAG 1347
                                                                                                                                                                                                                                              1231 TACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTC 1290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1051 CAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAA 1110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   926 TGTTGGTTGATGCATAACACACCACGGCTAAACCCCGCTATTGATTACTTCACATACTCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               746 CCCTTCATTCGTTTTGCTATGGAAGCAACGATTCCCCTTCCAATTTTCGCTGAGTCTAGTC 805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    272 AAACCCACCAAGCAATCTCACGATGGTCTCGGATCTCTCCGATCAAGCCCGTCTTTTCTCC 331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             632 CAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCAACATCTCACTTTAGCTCAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TGGAACCATTCAGACTTATTTGAAAGATGCCAAGGAGAGGTTGTTGCTCACAACAAAGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGAGTCCAATGTACCATTGTTGATTGATGCGGAAGACACAATCCTCCAACCCGCGATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AACTTGCCAACCAGAGACTCCTTGAACTTTGCCAAAAATGTGAGGAAGCCAATATGCCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCTCCGAATCGAGTCCTCTCTACCACACACAAACTCAGAACCGGAACCGTTAACCGCGGAA 871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGGTGGGAATACAAAAGTCCGAACTTCAAACTCTCATGGAAGCTCAAATCGTTTCCGGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGCCTCATGGCAACTGTT-TAGAAAGAATGAGTGACCCTTCTTAGATGGCAACAAAAAGA
                                                                                                                                                                AACACAATTGCTTCÄÄTGGCTGCTCATCATTTCTTCTTGÄGÄAGATTGCTÄÄTGGACC 1342
                                                                                                                                                                                                                                                                                                                                AGAGAGTAAATTGGCTGAGTCATTTGGGTATGCATCCCCAATTCACAATACCATTCAAGA
                                                                                                                                                                                                                                                                                                                                                                                                         CGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACTAGTCAGGA 1230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AGCAGAAAAAATGGGAGTTCCATTGGGGTTCAAATTGGTTAGAGGTGCCTACATGTCCAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGTACCCAAGGCGCCTCTGGGGGGGTGATGCAGAACACACCACAGTTCAACCGGCTATCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTC-AAGAAATCTGTAGGAAATGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTGAAAACGAGTGAGCGATCTGCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGCTTACATGTCTAG 1170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTACTTCACATACTCTTCCTTCCATAAGGCACAATAAGGATGACAAC---CCCATTGTGTT 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACATCCACGACTATGGAGACGGCGAATCTCAACCTCGACGACGCGGAGCGGCTTTTCGCG 389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGCTGGTGTACGGTGGGAAGACGCGCATGAAAACGATGGGTGTGATAGCACTGCAATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTATCTTGTGATGATAACATGCAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GACGCCGCCGCCGGACGGACCATCAGCGCGCTCAAGGAGG----CCGGCTTACGTGGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTATGAAGCTACTGGTCTTAAAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAGGATCTCATCATGGCCGCCACGAAGGAGGACGTTCTTCTCGCACTTCTGCGCCGGCGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTATGACCATTTTTGCGCCGGTGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCCATGGTAGACCTGGGAATGTGGTTGATGAAGTCTCCGGTGTTCCAGACCGGGCTGCCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAACTTATGGACGCTTCGGTGACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TCAGTATCGACGGAAAAGCTGCTCCGGTCGTCGCGGTTTTTGCATGCGACGGCGGTGGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTGTTGCATGCGGCGGCGATAGGT 391
                                                                                                                                                                                                                                                                                                                                1282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                509
```

В

8 8 8 8 8

Ś

Б

Ś

유

밁

S 밁 S 밁 Ş 밁 Ş 밁 δ 밁 Ś 밁 Ś Ď, Ś 밁 S g 8 밁 δ 뫄

```
5
                                            片
                                                                                      S
                                                                                                                                           밁
                                                                                                                                                                                                                                 밁
                                                                                                                                                                             S
                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; OTHER INFORMATION: Clone ID: PAT_MRT3847_127465C.1 US-10-424-599-30413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 8
US-10-424-599-30413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: La Rosa Thomas J
APPLICANT: Kovalic David K
APPLICANT: Chow Yihua
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(53223)B
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 30413
                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 309;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 30413, Application US/10424599 Publication No. US20040031072A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH: 806
TYPE: DNA
ORGANISM: Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1763 TGTTÄTGTÄGGTTTTGTTGGÄÄ 1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1403 AAAAGCATATGAATTGGGGGTTGGAAAGGTAAACCACAAGCTAGAATTTGCACAACTGTA 1462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1348 GAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATA 1407
  479 AGTACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTG 538
                                               441 TTGCGATCAAATCTCATGCACGTGCATGGCATCCGCGACCTCATCCTCGCCACCGTCCGC 500
                                                                                                                                           381 TCCTCCGCCGTGCTGCACGCCACCGCCGTCGAGCCCATGGTTGACTTCGGCACATGGCTC 440
                                                                                                                                                                                                                                    321
                                                                                                                                                                                                                                                                                                                                261
                                                                                                                                                                                                                                                                                                                                                                            239 CAACAAGCACCGGAACCACCTCTTCACCACCCAAAACCCCACCGAGCAATCTCACGATGGT 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                         ATGAGCTCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAA 478
                                                                                                                                                                                                                                    CTCAGCTTCCGCGACGTCGAAAAAGCTCTTCTCCTCTGTCTCCACCACCAGCCTCCTCCGC 380
                                                                                                                                                                                                                                                                              CTCGATCTCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGT 358
                                                                                                                                                                                                                                                                                                                             ATGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAAATTGAAAACAAAAATTATAATA 1707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAGATTAAAAGCTGCAATGTTCTAAATTTGTCAGAAATCAGGATTCATTGACTTTTTGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGATTAATCGCCGGGATTGCGTAAAGAGAGTATGGAGCCATTAAATGAAATTGGGAA 1647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TAGAGGGCTTTTGGCTGCATCAGGTTTTGATAGGCAATTGATGAGAAAGGAGTTGGGAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAA 1527
                                                                                                                                                                                     TCCACCGCGTGTTGCATGCGGGGGGATAGGTCCTATGGTCGACCTAGGGACGTGGGTC 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TAAGAAATGGAGTAGGTAAGAA 1729
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATGCCATTTGGGCCGGTAGATATGGTTATGCCTTACCTTCTGAGAAGGGCTGAAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGAATGTCAGAGGCACTTTCCTTTGGTTTGAGCAATGCAGGGTTTCAAGTTAGCAAGTA 1522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TGGTATGTCAGATGGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTA 1467
                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                             8.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                         0
                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 158.6; DB 12; Length 806; Pred. No. 1.4e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches 229; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                         ω
•-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1582
```

```
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                           Ś
                                                           US-09-938-842A-4104
                                                                              RESULT 10
                                                                                                                                            밁
                                                                                                                                                                              Ş
                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-938-842A-4104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-938-842A-4104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                   Sequence 4104, Application US/09938842A Publication No. US20040009476A9
                                                                                                                                                                                                                                                                                                                                                                               Query Match 8.2%; Score 151; DB 9; Length 2000; Best Local Similarity 100.0%; Pred. No. 2.4e-28; Matches 151; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQ ID NO 4104
LENGTH: 2000
                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 4104, Application US/09938842A Patent No. US20020160378A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Harper, Jeff
APPLICANT: Kreps, Joel
APPLICANT: Wang, Xun
APPLICANT: Wang, Xun
APPLICANT: Zhu, Tong
TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
TITLE OF INVENTION: SAME, AND METHODS OF USE
FILE REFERENCE: SCRIP1300-3
CURRENT APPLICATION NUMBER: US/09/938,842A
CURRENT FILING DATE: 2001-08-24
PRICE ARTS ART TOWNTON NUMBER: US/09/966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR FILING DATE: 2001-06-22
NUMBER OF SEQ ID NOS: 5379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR FILING DATE: 2001-01-16
PRIOR APPLICATION NUMBER: US 60/300,111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION NUMBER: US 60/227,866 PRIOR FILING DATE: 2000-08-24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 2000
TYPE: DNA
ORGANISM: Arabidopsis thaliana
                                                                                                                                            1970
                                                                                                                                                                                                                       1910
                                                                                                                                                                                                                                                                                                      1850
                                                                                                                                                                                   121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        798 A 798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               779 A 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   738 ATGAGCCTGTTGGAACGAATGAGTGACCTTCTTAGATGGCAACACAAGGACCCTTGTTTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       719 ATTAGTCTTCTGAAACGAGTGAGCGATCTGCTGCGGTGGGAATACAAAAGTCCGAACTTC 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                678 AGATCGCTTCCCCCTTCTTCGGTGAGCTTTGTGATAGTGAAAAATCACCGCAATATGTCCT 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      659 AAATCTTTACCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCA 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               618 AACGACAACGACGCCTGCCACCGCAACTTCAAGGGCTTTCTTCACACCÁTCGACGTCAGC 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     561 CÉCCACCT---AMACCGTGCCGGCCTCCGCGGCÁTGCTCGTCTACGGCGTCGAAGACGCA 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               501
                                                                                                                                                                                                                                                                61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    539 AGAAGCGTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCC 598
                                                                                                                                                                                                                                                                                                                                               Ľ
                                                                                                                                                                                 CCGTCTTCTCCGAACAAACTTTATCCGGCGA 151
                                                                                                                                                                                                                                                   GAGAAATTATTTTTTTTTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAAC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACACCTTCTTCGACCACTTTTGCGCCGGCGAGGACGCCATCACCACCACCACCAGCAGCAGC
                                                                                                                                        CCGTCTTCTCCGAACAAACTTTATCCGGCGA 2000
                                                                                                                                                                                                                     GAGAAATTATTTTTTTTTTTTCGTTTTCAAAAAACAAAATCTTTGAATTTTATGGCAAC
                                                                                                                                                                                                                                                                                                    <u>.</u>
                                                                                                                                                                                                                     1969
                                                                                                                                                                                                                                                                                                                                                                                 0
밁
                                Ş
                                                                            B
                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
```

```
APPLICANT: Harper, Jeff
APPLICANT: Kreps, Joel
APPLICANT: Wang, Xun
APPLICANT: Zhu, Tong
TITLE OF INVENTION: STRESS-REGULATED GENES OF PLANTS, TRANSGENIC PLANTS CONTAINING
TITLE OF INVENTION: SAME, AND METHODS OF USE
FILE REFERENCE: SCRIP1300-3
CURRENT APPLICATION NUMBER: US/09/938,842A
CURRENT APPLICATION NUMBER: US 60/227,866
PRIOR APPLICATION NUMBER: US 60/227,866
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR APPLICATION NUMBER: US 60/264,647
PRIOR FILING DATE: 2001-01-16
PRIOR FILING DATE: 2001-05-22
NUMBER OF SEQ ID NOS: 5379
SEQ ID NO 4104
LENGTH: 2000
                                                                                                                                                                                                                                                                                                                                                                              ; OTHER INFORMATION: Clone ID: PAT_MRT3847_124491C.1 US-10-424-599-27121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; TYPE: DNA
; ORGANISM: Arabidopsis thaliana
US-09-938-842A-4104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-424-599-27121/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: La Rosa Thomas J
APPLICANT: Kovalic David K
APPLICANT: Kovalic David K
APPLICANT: Cao Yongwei
TITLE OF INVENTION: Soy Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21/5322)B
FILE REFERENCE: 38-21/5322)B
CURRENT APPLICATION NUMBER: US/10/424,599
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 285684
SEQ ID NO 27121
LENGTH: 609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 27121, Application US/10424599
Publication No. US20040031072A1
                                                                                                                                                                                                                                                        Matches 275;
                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 151; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
                                                         1172 GAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACAATTCAGGAT 1231
                                                                                                                                                                                     1112 GCTGAGAAAGAATGTTCCTATGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGTCTAGC 1171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1970 CCGTCTTCTCCGAACAACTTTATCCGGCGA 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1910 GAGAAATTATTTTTTTTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAAC 1969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          544 AAGAGTGAATTGGGTGAGTCACTTGGGTATGCATCCCCAATTGGCAACCCCATTCAAGAA 485
                                                                                                                        604 GCAGAAAAAATGGGAGGTCCTAAGGGGTTCAAATAGGTTAGAGGCGCCCCCATGGCCCCA 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 CCGTCTTCTCCGAACAAACTTTATCCGGCGA 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 GAGAAATTATTTTTTTTTTTTTCGTTTTCAAAAACCAAAATCTTTGAATTTTATGGCAAC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                54.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8.2%; Score 151; DB 11;
100.0%; Pred. No. 2.4e-28;
                                                                                                                                                                                                                                                     0; Mismatches 227; Indels
                                                                                                                                                                                                                                                                                Score 125.8; DB 12; Length Pred. No. 4.1e-22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                     سا
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٥,
                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1909
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
```

```
뭥
                                                                                                                                      δ
                                                   Š
                                                                                                                                                                             밁
                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
US-10-119-635-3
                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  뮍
                                                                                                                                                                                                                                                                                                                                                                                                                     US-10-119-635-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/277,262
PRIOR FILING DATE: EARLIER FILING DATE: 1999-03-26
NUMBER OF SEQ ID NOS: 9
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 3.5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 3, Application US/10119635

Publication No. US20020193581A1

GENERAL INFORMATION:
APPLICANT: Karayiorgou, Maria
APPLICANT: Karayiorgou, Maria
APPLICANT: Gogos, Joseph A
TITLE OF INVENTION: METHODS OF DETERMINING A SUSCEPTIBILITY TO OR PRESENCE
TITLE OF INVENTION: OF SCHIZOPHRENIA, OR A DISEASE OR DISORDER RELATED
TITLE OF INVENTION: THERETO
FILE REFERENCE: 600-1-223 CIP
                                                                                                                                                                                                                                                                                                                                      Matches 367;
                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/10/119,635
CURRENT FILING DATE: 2002-04-10
                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 1494
TYPE: DNA
ORGANISM: Mus musculus
                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                         1589 AGATTAATCGCCGGGATTGCGTAAA 1613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1409 GGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTAC 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1349 AAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATAT 1408
                    904 AAG------CCGTTCATCTTCAACACATTCCAGTGCTACCTCAAGGATGCCTATGACAAT 957
                                                                                                                                    971 ATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGAC 1030
                                                                                                                                                                                                                                                                                             851 CCGGAACCGTTAACCGCGGAAGAAGAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAA 910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    184 ACAGGGCTTTTĞĞTTGCGTCAĞGİTTTTATAĞGCAATTTTTĞAĞAAAĞGAĞTTĞGGGAAĞA 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         364 AAAGCCATTCAATTGGGGGTTGGAAAGGTCAACCCCCAGCTAAAATTTGCCCCCCTGTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         124 AAATTAAAAACTGCAATGTTTTAAA 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              424 GGTTCAATTTCAGTTGTTTTTTCCCCCTCCCAATATTGGTTCAGGGAAATGGGCTTCCACC 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                484 AAACCCCATTGCTTCAAGGGCGGCGCCTCATTTTTTTCAGAAAAGATAGAAAAAGGACCC 425
                                                                                               TACTTCCAACCAGCCATCAGCCGCCTGACCCTGGAGATGCAGCGCAGGTTCAATGTGGAT 903
                                                                                                                                                                             CTGTCACGGTTCACTGAGGAGGAÄĞAĞCAĞCAĞATGAAAAGGATGCTGCAGAĞĞATGGAT 783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGG 1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAAC 1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGAAAGCAACAGGCCCTTTCCTTTCGTTTGAACAATCCAGGGTTTCTAGTTGAGAAGTAT 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTT---TCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGG 1348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTCACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCT 1291
                                                                                                                                                                                                                                                                                                                                  6.7%; Score 123.6; DB 13; Length 1494; ilarity 48.7%; Pred. No. 2.7e-21; Conservative 1; Mismatches 380; Indels 6;
                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       305
                                     밁
                                                                        Ś
                                                                                                               밁
                                                                                                                                                Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 13
US-10-119-635-7
                                                                                                                                                                                                                                                                        US-10-119-635-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뭥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S
                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                     SEQ ID NO 7
                                                                                                                                                                                                                                                                                         LENGTH: 2240
TYPE: DNA
ORGANISM: Mus musculus
971 ATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGAC 1030
```

```
Sequence 7, Application US/10119635
Publication No. US20020193581A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Gogos, Joseph A
TITLE OF INVENTION: METHODS OF DETERMINING A SUSCEPTIBILITY TO OR PRESENCE
TITLE OF INVENTION: OF SCHIZOPHRENIA, OR A DISEASE OR DISORDER RELATED
TITLE OF INVENTION: THERETO
FILE REFERENCE: 600-1-223 CTP
CURRENT APPLICATION NUMBER: US/10/119,635
CURRENT FILING DATE: 2002-04-10
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/277,262
PRIOR PILING DATE: EARLIER FILING DATE: 1999-03-26
NUMBER OF SEQ ID NOS: 9
NUMBER OF SEQ ID NOS: 9
SOFTWARE: Patentin Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Karayiorgou, Maria APPLICANT: Gogos, Joseph A
                                                                                                                                                                                                                                                                                               y Match
6.7%; Score 123.6; DB 13;
Local Similarity 48.7%; Pred. No. 3.4e-21;
hes 367; Conservative 1; Mismatches 380;
1020 CTGTCÁCGGTTCÁCTGAGGAGGAAGAAGCAGCAGATGAÁAAGGATGCTGCAGAGGÁTGGÁT 1079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1211 GTCCACGACACTATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1091 CTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTG 1150
                                                                851 CCGGAACCGTTAACCGCGGAAGAAGAAAGGGAGCTCGAAGCAGCTCATGGAAGGATTCAA 910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            958 GTGACCTTGGATATGGAACTGGCTCGCCGTGAGGGCTGGTGTTCCGGGGCCAAGCTGGTA 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGGCAGGAGCTCCGCAGGCGGCTGCGCACTGGCA 1471
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGGATGGAACTTAAGAGGAGATTAATCGCCGGGA 1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATG 1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCG 1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTGCACTTCACKTTGTGCAGGATGAAGGAGATAGGCCTGCATCCTGCTGATGGTCAGGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATA 1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GAGGAGCTGAAGCACAGCACCAAGGCAGGAAGTGATGGTGGCTTCCCACAACGAGGACACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATCAACCCTACATATGAAGCCACCAATGCTATGTACCACAGGTGCCTTAACTATGTTCTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CGTCGTGCATACATGGCCCAAGAGCGTGTCAGGGCAGCAGAGATCGGTTATGAAGACCCC 1077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTCCTGTGTACAAGTATGTGCCCTATGGCCCTGTGATGGAGGTACTCCCTTACCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAAACCGCTATACCGTATCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGATTCCCTGGGTTGCAAGTCGCCA 1210
                                                                                                                                                                                                                                                                                                                                                                            Length 2240;
                                                                                                                                                                                                                                                                                                   6
                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1270
```

```
APPLICANT: Bric B. Kniec

APPLICANT: Howard B. Gamper

APPLICANT: Michael C. Rice

APPLICANT: Michael C. Rice

APPLICANT: Michael C. Rice

APPLICANT: Jungsup Kim

TITLE OF INVENTION: Targeted Chromosomal Genomic Alterations in Plants

TITLE OF INVENTION: Using Modified Single Stranded Oligonucleotides

FILE REFERENCE: Napro/1009 PCT

CURRENT APPLICATION NUMBER: US/10/307,005

CURRENT FILING DATE: 2002-11-26

PRIOR APPLICATION NUMBER: US/01/17672

PRIOR APPLICATION NUMBER: US/01/28,538

PRIOR APPLICATION NUMBER: US/01/28,538

PRIOR APPLICATION NUMBER: US/01/28,538

PRIOR APPLICATION NUMBER: US/01/28,538

PRIOR APPLICATION NUMBER: US/01/28,538

PRIOR APPLICATION NUMBER: US/01/28,538

PRIOR APPLICATION NUMBER: US/01/28,538

PRIOR APPLICATION NUMBER: US/01/28,538

PRIOR APPLICATION NUMBER: US/01/28,538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 14
US-10-307-005-989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 989, Application US/10307005 
Publication No. US20030236208A1 
GENERAL INFORMATION:
                                                            SOFTWARE: Friedman macro Napro4
SEQ ID NO 989
LENGTH: 121
                                                                                                                                                       PRIOR APPLICATION NUMBER: US 09/818,875
PRIOR FILING DATE: 2001-03-27
NUMBER OF SEQ ID NOS: 2717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: University of Delaware APPLICANT: Eric B. Kmiec
ORGANISM: Arabidopsis thaliana
                                     TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1331
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1571 AGGATGGAACTTAAGAGGAGATTAATCGCCGGGA 1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1674
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1391 GAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGG 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1374 ATCAACCCTACATATGAAGCCACCAATGCTATGTACCACAGGTGCCTTAACTATGTTCTG 1433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1091 CTGCATTTGGCAGTACAAAATGCTGAGAAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTG 1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1140 TACTTCCAACCAGCCATCAGCCGCCTGACCCTGGAGATGCAGCGCAGGTTCAATGTGGAT 1199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCA 1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TGGCAGGAGCTCCGCAGGCGGCTGCGCACTGGCA 1767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGGTCAACTCATG 1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TTTCCTGTGTACAAGTATGTGCCCTATGGCCCTGTGATGTAGGTACTCCCTTACCTGTCC 1673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTC 1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTGCACTTCACKTTGTGCAGGATGAAGGAGATAGGCCTGCATCCTGCTGATGGTCAGGTG 1553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATA 1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGGAGCTGAAGCACAGCACCAAGGCAGAAGTGATGGTGGCTTCCCACAACGAGGACACC 1493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACATAACGCTGATTCG 1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATG 1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CGTCGTGCATACATGGCCCAAGAGCGTGTCAGGGCAGCAGAGATCGGTTATGAAGACCCC 1373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTGACCTTGGATATGGAACTGGCTCGCCGTGAGGGCTGGTGTTCCCGGGGCCAAGCTGGTA 1313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAG-----CCGTTCATCTTCAACACATTCCAGTGCCTCAAGGATGCCTATGACAAT 1253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGA 1090
```

```
APPLICANT: University of Delaware
APPLICANT: Exic B. Kmiec
APPLICANT: Howard B. Gamper
APPLICANT: Michael C. Rice
APPLICANT: Michael C. Rice
APPLICANT: Michael C. Rice
APPLICANT: Michael C. Rice
TITLE OF INVENTION: Targeted Chromosomal Genomic Alterations in Plants
TITLE OF INVENTION: Using Modified Single Stranded Oligonucleotides
FILE REFERENCE: Napro/009 pcr
CURRENT APPLICATION NUMBER: US/10/307,005
CURRENT APPLICATION NUMBER: PCT/US01/17672
PRIOR APPLICATION NUMBER: PCT/US01/17672
PRIOR APPLICATION NUMBER: US 60/208,538
PRIOR APPLICATION NUMBER: US 60/244,989
PRIOR FILING DATE: 2000-08-01
PRIOR PILING DATE: 2000-10-30
PRIOR FILING DATE: 2000-10-30
PRIOR FILING DATE: 2000-10-30
PRIOR FILING DATE: 2000-10-30
PRIOR FILING DATE: 2000-10-30
                                         á
                                                                                        В
                                                                                                                                    Ś
                                                                                                                                                                                   ద
                                                                                                                                                                                                                                                                                                                                                                      ; TYPE: DNA
; ORGANISM: Arabidopsis thaliana
US-10-307-005-990
                                                                                                                                                                                                                             5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 15
US-10-307-005-990/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-307-005-989
                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION NUMBER: US 09/818,875
PRIOR FILING DATE: 2001-03-27
NUMBER OF SEQ ID NOS: 2717
SOFTWARE: Filedman macro Napro4
SEQ ID NO 990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 990, Application US/10307005
Publication No. US20030236208A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GENERAL INFORMATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: DN
                                                                                                                                                                                                                                                                                                 Local Similarity
                                              191 A 191
                                                                                                                        131 CGAACAAACTTTATCCGGCGATCTTACCGTTTACCCGCTTTTAGCCCGGTGGGTCCTCCC 190
                                                                                                                                                                                     121 TTTTTTTGTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      121 A 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  191 A 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          131 CGAACAAACTTTATCCGGCGATCTTACCGTTTACCCGCTTTTAGCCCGGTGGGTCCTCCC
                                                                                                                                                                                                                                                                              120;
                                                                                          61 TGAACAAACTTTATCCGGCGATCTTACCCGTTTTACCCGCTTTTTAGCCCGGTGGGTCCTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 TGAACAACTTTATCCGGCGATCTTACCGTTTACCCCGCTTTTAGCCCGGTGGGTCCTCCC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        71 TTTTTTTTGTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGTCTTCTC 130
1
A
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 TTTTTTTTGTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                             121
                                                                                                                                                                                                                   TTTTTTTTGTTTTCGTTTTCAAAAACAATCTTTGAATTTTATGGCAACCCGTCTTCTC 130
                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                         6.5%; Score 119.4; DB 15; Length 121; 99.2%; Pred. No. 7.1e-21; ative 0; Mismatches 1; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99.24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 119.4; DB 15; Length 121; Pred. No. 7.1e-21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                     62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         60
                                                                                                                                                                                                                                                                              0
```

Search completed: March 10, Job time: 604.434 secs

2004, 11:58:36

a

ი

a

```
Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27513289 seqs, 14931090276 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-026-767-3
1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      March 10, 2004, 10:40:15 ; Search time 4183.5 Seconds (without alignments) 13084.110 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 agcgtttagaaaaaacagc.....ataaaaatgctttttacttt 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GenCore version 5.1.6 Copyright (c) 1993 - 2004 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         em_estmu:*
em_estcv:*
em_estcv:*
em_estcv:*
em_htc:*
gb_est1:*
gb_est4:*
gb_est5:*
gb_est5:*
em_estfun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_estba:*
em_esthum:*
em_estin:*
em_gss_hum:
em_gss_lin:
em_gss_plin:
em_gss_fun:
em_gss_fun:
em_gss_mam:
em_gss_mam:
em_gss_mam:
em_gss_mam:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gss_pro:
em_gs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      55026578
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Reg	Result		Query				•
	ő	Score Match Length DB II	Match :	Length	88		Description
n		684.2	37.3	690	9		AV784199 AV784199
	N	653	35.6	664	9	AV823266	AV823266 AV823266
	ω	550.8	30.0	554	φ	AV553853	AV553853 AV553853
	4	542.2	29.6	563	φ	AV830448	AV830448 AV830448

4 4 0 0 4 0	4 4 3 2	41	4 U	ນ ເມ ວີ 00	37	36	35 -	34	ယ ယ	ည (2	ָי נ	9 10) t	N 1	27	26	N 5	24	23	22	21	20	1 9	18	17	16	15	14	3	12	11	10	w	œ	7	თ	Üτ
	4.	47.	353.2	. 0	68	71.	71.	75.	37	381.8	0 1	91	n c	3	40		11.	4	u	15.	\vdash		N	N	427.4	۰	9	46	75	81.	'n	4	•	អ្ន	517.2	36.	41.
	ထေ	9	9 .	. 9	.0	0	0	0		٥!	- !	۲!	٠:	٠,	9				'n			۶	Ψ	w •	ω	ω ·	4	ა	ŗ	٥.	٥.	7.	7.	8	œ	۰	9.
342	04	σ	~ u	oυ	w	œ	œ	œ	4	N	4	N	v	ς,	0 1	N	4	_	N	\vdash	N	\vdash	N	N	w	ω	ø	_	2	œ	ഗ	U3	4	-	4	4	4
	0 0	0	O	4.	œ	0		8	4	æ		•	• 0	4			₽		4								4	14	14	φ	14	14	14	φ	28	9	9
AV533298 BZ007035	AL947958 BE524810	BE521125	BE521126	T41726	BZ039614	BE524790	AV819277	BZ465331	T43041	BH487028	AA395287	AV808518	D050075	CD839187	AV561789	AV819048	CD825843	AV803385	CD824641	AV805031	AV805545	AV816969	AA586088	AV809949	AV788703	AV819304	CD825384	CD835442	CD813554	AV556853	83210	CD837236	CD813513	AV563245	AQ959076	AV530853	AI998362
533298 AV5332 Z007035 oem84	0 8	521125 M17T23	521126 M17T23	10307 Lamb		~		μ	o,		-	AV808518 AV808518	A0959075 I.RRRH17TF	CD839187 RFO2.114F	AV561789 AV561789	AV819048 AV819048	CD825843 BN25.061P	AV803385 AV803385	CD824641 BN25.058E	AV805031 AV805031	AV805545 AV805545	AV816969 AV816969	AA586088 28737 Lam	AV809949 AV809949	AV788703 AV788703	1 AV819304	CD825384 BN25.060J	CD835442 BN45.045I	CD813554 BN15.020B	AV556853 AV556853	CD832104 BN40.062A	CD837236 BN45.051I	CD813513 BN15.0190	AV563245 AV563245	AQ959076 LEREH17TF	AV53	701545

ALIGNMENTS

a

იიი

o o

a

-	TITLE JOURNAL COMMENT	REFERENCE AUTHORS	VERSION KEYWORDS SOURCE ORGANISM	RESULT 1 AV784199/c LOCUS DEFINITION ACCESSION
Plant Functional Genomics Research Group RIKEN Genomic Sciences Center 3-1-1 Koyadai, Tsukuba, Ibaraki 305-0074, Japan Tel: 81-298-36-4159 Fax: 81-298-36-9060 Email: msekiortc.riken.go.jp	and Shinozaki,K. Large scale analysis of Arabidopsis full-length cDNA (2002b) Unpublished (2002) Contact: Motoaki Seki	Spermatophyta; Magnoliophyta; eudicoty.ledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis. 1 (bases 1 to 690) 1 (bases 1 to 690) Seki, M., Narusaka, M., Ishida, J., Kamiya, A., Satou, M., Nakajima, M., Oono, Y., Sakurai, T., Carninci, P., Kawai, J., Itoh, M., Ishii, Y., Arakawa, T., Shibata, K., Shinagawa, A., Muramatsu, M., Hayashizaki, Y.	AV784199.1 GI:19802989 EST. Arabidopsis thaliana (thale cress) Arabidopsis thaliana Arabidopsis thaliana Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;	AV784199 690 bp mRNA linear EST 28-MAR-2002 AV784199 RAFL5 Arabidopsis thaliana cDNA clone RAFL05-17-E01 3', mRNA sequence. AV784199

EST 01-APR-2002

```
Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      686;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       An Arabidopsis full-length cDNA library was constructed essentially as reported previously (Seki et al., 1998). This clone is in a modified pBluescript vector as a SstI/XhoI insert. Please visit our web site (http://www.gsc.riken.go.jp/e/plant/index _e.html) for further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGTCGCCAGTCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACA 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAGTTGGTGAGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCTGGGTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCG 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAG 1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAAC 1381
                                                                                                     TTCACCTTATCAATAAAAATGCTTTTTAC 1830
                                                                                                                                                                                                 CTAAATATTTTTCATGAGGGACTATGTTTTTACTACTATAAATATATCATTCACAAATGTATA
                                                                                                                                                                                                                                                                                                            GAAATTGAAAACAAAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTGG
                                                                                                                                                                                                                                                                                                                                                                                         ATGGAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAA 1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAAC 451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGCCTCTCGCAACACATAAC 511
                                                                                                                                                                CTAAATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTATA
                                                                                                                                                                                                                                                                                                                                                          ATGGAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTAA 151
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATCTTCTCCGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGT 1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTCCTGATGGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAAC 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /clone lib="RAFL5"
/note="Site_1: SstI; Site_2: XhoI; subjected
dehydration-treated(1,2,5,10,24 hr)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /mol_type="mRNA"
/db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /dev_stage="rosette plants"
/lab_host="SOLR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                clone="RAFL05-17-E01"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        37.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 684.2; DB 9; Length Pred. No. 7.3e-127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         571
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
SOURCE -
ORGANISM
                                                                                      S
                                                                                                                                            밁
                                                                                                                                                                                       S
                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                묽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 653;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local
361
                                                                                                                                                                                       241
                                                                                              301
                                                                                                                                                                                                                                       192
                                                                                                                                                                                                                                                                                     181
                                                                                                                                                                                                                                                                                                                                      132
                                                                                                                                                                                                                                                                                                                                                                                    121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                12
                                                                                                                                                                                                                                                                                                                                                                                                                                    72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ٠
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: mseki@rtc.riken.go.jp
An Arabidopsis full-length cDNA library was constructed essentially
as reported previously (Seki et al., 1998). This clone is in a
modified pBluescript vector as a SstI/XhoI insert. Please visit our
web site (http://www.gsc.riken.go.jp/e/plant/index _e.html) for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Motoaki Seki
Plant Functional Genomics Research Group
RIKEN Genomic Sciences Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Large scale analysis of Arabidopsis full-length Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seki,M., Narusaka,M., Ishida,J., Kamiya,A., Satou,M., Nakajima,M., Oomo,Y., Sakurai,T., Carninci,P., Kawai,J., Itoh,M., Ishii,Y., Arakawa,T., Shibata,K., Shinagawa,A., Muramatsu,M., Hayashizaki,Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA sequence.
AV823266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AV823266 RAFL5 Arabidopsis thaliana cDNA clone RAFLO5-17-E01 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tel: 81-298-36-4359
Fax: 81-298-36-9060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3-1-1 Koyadai, Tsukuba, Ibaraki 305-0074,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and Shinozaki, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rosids; eurosids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana (thale cress)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AV823266.1 GI:19865323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                        ACAAGCACCGGAACCACCTCTTCACCACCCAAAACCCACCGAGCAATCTCACGATGGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGAAATTATTTTTTTTTTTTTCGTTTTCCAAAAACAAAATCTTTGAATTTTATGGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CACCGCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCAT
                                                                                                                                                                                                                                       GGGTCCTCCCACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACA
                                                                                                                                                                                                                                                                           GGGTCCTCCCACCGTGACTGCTTCCACCGCCGTCCCCGGAGATTCTCTCCTTTGGACA
                                                                                                                                                                                                                                                                                                                                        CCGTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CGATCTCTCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTC
                                                                                                                                                                                                                                                                                                                                                                                 CCGTCTTCTCCGAACAACTTTATCCGGCGATCTTACCCGTTTACCCGCTTTTAGCCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                    GAGAAATTATTTTTTTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 664)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone lib="RAFL5"
/note="Site_1: SstI; Site_2: XhoI; subjected dehydration-treated(1,2,5,10,24 hr)"
                                                                                                                                                                                                                                                                                                                                      CTCCGAACAAACTTTATCCGGCGATCTTACCGGTTTACCCGCTTTTAGCCCGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /mol_type="mRNA"
/db_xref="taxon:3702"
/clone="RAFL05-17-E01"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lab
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        dev_stage="rosette plants"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   35.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           host="SOLR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 653;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .3e-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
```

0;

0

191

240

131 120 71 9 á

1442

390

S

밁

450

Ś

밁 S 밁 Ś 밁 Ś

1262

1142

690

밁

510

RESULT 2 AV823266

420

311

δ 밁 Ś 밁 S 片 Ś 片 Š 밁 Ś 닭

1802

30

90

1742

1682

150

1622

270

210

1562

330

```
REFERENCE
AUTHORS
                   8
                                                   멂
                                                                             8
                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 3
AV553853
밁
                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         뫄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pocus
                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                  Matches
                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                              Local
                   1055 ACGATTCAGGCGTACTIGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAATGCT 1114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421
                                                                                                                                                                552;
                                                      5
                                                                                                          Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
Arabidopsis thaliana
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Erika Asamizu
The First Laboratory f
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A large scale analysis of cDNA in Arabidopsis thaliana: Generation of 12,028 non-redundant expressed sequence tags from normalized and size-selected cDNA libraries
DNA Res. 7 (3), 175-180 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AV553853 Arabidopsis thaliana roots Columbia Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                            10907847
                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                Kazusa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20363093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Asamizu, E., Nakamura, Y., Sato, S. and Tabata, S.
                                                                                                                                                                                                                                                                                                                                                                                                  Yana 1532-3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AV553853.1 GI:8725266
ACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGACTGCATTTGGCAGTACAAAATGCT
                                                    AAGCGTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGA 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GAGCTCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAG
                                                                             AAGCGTTTATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAGCTCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CACCGCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCAT 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TACGTTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (bases 1 to 554)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ds; eurosids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               clone RZ74c03R 5',
                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                      532-3, Kisarazu, Chiba 292-0812, Japan
asamizu@kazusa.or.jp, URL:http://www.kazusa.or.jp/en/plant/.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                DNA Research Institute
                                                                                                                                                                                                                                             /tissue_type="roots"
/clone_lib="Arabidopsis thaliana roots Columbia"
/clone_"Vector: pBluescriptII SK-; Site_1: EcoRI; Site_2:
                                                                                                                                                                                                                                                                                     /db_xref="taxon:3702"
/clone="RZ74c03R"
                                                                                                                                                                                                                                                                                                                   /strain="Columbia"
                                                                                                                                                                                                                                                                                                                                /organism="Arabidopsis thaliana"
/mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                           Laboratory for Plant Gene Research
                                                                                                                                                                           30.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   II; Brassicales; Brassicaceae; Arabidopsis
                                                                                                                                                              0; Mismatches
                                                                                                                                                                           Score 550.8; DB 9;
Pred. No. 4.2e-100;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA sequence.
                                                                                                                                                               Indels
                                                                                                                                                                                      Length 554;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EST 06-SEP-2000
                                                                                                                                                              ٥,
                                                                                                                                                              Gaps
180
                                                   120
                                                                                                         60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           480
                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 4
AV830448
                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                    COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          띩
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                            Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      241
```

```
1115 GAGAAAGAGAATGTTCCTATGGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGTCTAGCGAA 1174
                                                                                                                                                                                                                                                                                                                                                                        Email: mseki@rtc.riken.go.jp

An Arabidopsis full-length cDNA library was constructed essentially

An Arabidopsis full-length cDNA library was constructed essentially

as reported previously (Seki et al., 1998).cDNA cleaved with BamHI

and XhoI was ligated to modified Lambda FLC-1 vector (Carninci et

al., submitted for publication) digested with BamHI and SalI. This

clone is in a modified pBluescript vector. Please visit our web

site (http://www.gsc.riken.go.jp/e/plant/index_e.html) for further
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RIKEN Genomic Sciences Center
3-1-1 Koyadai, Tsukuba, Ibaral
Tel: 81-298-36-4359
Fax: 81-298-36-9060
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seki,M., Narusaka,M., Ishida,J., Kamiya,A., Satou,M., Nakajima,M., Oono,Y., Sakurai,T., Carninci,P., Kawai,J., Itoh,M., Ishii,Y., Arakawa,T., Shibata,K., Shinagawa,A., Muramatsu,M., Hayashizaki,Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thaliana (thale cress) Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AV830448 AV830448 AV830448 AV830448 AV830448 AV830448 AV830448 AV830448 AV830448 AV830448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Plant Functional Genomics Research Group
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Motoaki Seki
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Large scale analysis of Arabidopsis full-length cDNA (2002b) Unpublished (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AV830448.1 GI:19872508
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and Shinozaki,K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              rosids; eurosids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTGGACCCGTCGC 1488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCG 1474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCG 1354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CACTOTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCTGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CACTCTTGTTACAATGATTGTATGACATTCCTGATGGAGAAAGCATCAAACGGTTCTGGT 1294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GCTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACAATTCAGGATACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCAGTCCACGACACAATTCAGGATACT 1234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GAGAAAGAGAATGTTCCTATGGGGGTTCAAGTTGGTGAGAGGGGGCTTACATGTCTAGCGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATG 1414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TTCGGTGTCGTTCTCGCAACACATAACGCTGATTCGGGGAAGACTTGCGTCGAGGAAAGCG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 563
/dev_stage="plants at various developmental stages
germination to mature seeds"
/lab_host="DH10B"
                                                                                 /mol_type="usus / /mol_type="taxon:3702" /db_xref="taxon:3702" /clone="RAFL09-69-M18" / /clone="raffus at 1
                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                     organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      II; Brassicales; Brassicaceae; Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ibaraki 305-0074,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA linear EST 01-AF
a cDNA clone RAFL09-69-M18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST 01-APR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       540
```

Ś B 8

밁 Ś B

```
RESULT 5
AI998362/c
LOCUS
                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
TITLE
                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            77
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              83
                          Chen, J., Momiyama, M., Chan, E., Mooney, M., Carroon, B., Gillile Wang, X., Hillman, J., Guegler, K., Kim, C., Doyle, M., Brzoska, P. Gorgone, G., Burns, D., Griffin, J., Mouanoutoua, M., Nguyen, D., Tan, R., Rose, M., Warren, B., Ton, B., Kastury, K., Borillo, C., Carpio, T., Policky, J., Suzuki, G., Argentine, C., Shah, S., Nobriga, A., Murry, L., Turner, C., Krikorian, S., Elder, L. and Wang, A., Murry, L., Turner, C., Krikorian, S., Elder, L. and
                                                                                                                                                   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                 AI998362
549 bp mRNA linear EST 08-SEP-1999
701545370 A. thaliana, Columbia Col-0, rosette-2 Arabidopsis
thaliana cDNA clone 701545370, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    σ
                                                                                                                                                                                                            Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
                                                                                                                                                                                                                                                  AI998362.1 GI:5845267
EST.
                                                                                                                                                                                                                                                                                    AI998362
Arabidopsis thaliana Gene Expression MicroArray
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TCTAAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGGACGTGGGTCATGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTTATG 563
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTTTATG 551
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TTTTATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCCGTGTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 crereceareaacecererriececererareecaacererearereerecereceace
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCTCCGATCAAGCCCGTCTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GCACCGGAACCACCTCTTCACCACCCAAAACCCACCGAGCAATCTCACGATGGTCTCGAT 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CTTCTCCGAACAACTTTATCCGGCGATCTTACCGTTTACCGCTTTTAGCCCGGTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AATTATTTTTTTTTGTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGT 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CCTCCCACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTTCTCCGAACAAACTTTATCCGGCGATCTTACCCGTTTTACCCGCTTTTAGCCCCGGTGGGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AATTATTTTTTTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGT
                                                                                                                                          (bases 1 to 549)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone lib="RAFL9" /clone lib="RAFL9" /note=^{-1}Site 1: BamH1; Site 2: Sall; subjected to /ehydration (1, 2, 5, 10, \overline{24} hr) and cold (1, 2, 5, hr) treatments"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     29.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 542.2; DB 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 9;
                                                                                                                     Carroon, B., Gilliland, D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                    Brzoska, P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               436
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              256
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                76
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                            S
                                                                  밁
                                                                                                Ś
                                                                                                                                      밁
                                                                                                                                                                 ঠ
                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                            S
                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                       맑
                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       $
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bource
```

멍 Ś 밁 S Ď, S 멼 S 밁 Ś B 8 밁 8

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity 99.5%;
                                                                                                                                                                                                          1690
                                                                                                                                                                                                                                                                                                                  1630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1450
1810 ATCAAT 1815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   486
                                                                                                                                                          126
                                                                                                                                                                                                                                                                   186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              546 GAAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTCTCGCAACACATAACGCTGATTC
                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      543,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4633 World Parkway Circle, St. Louis, Tel: 877-577-2733
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: David Smoller, Ph.D.

Genome Systems, Inc., a wholly owned subsidiary of Incyte Pharmaceuticals, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTC
                                                     TTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTATATTCACCTA
                                                                                 TTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTATATTCACCTT 1809
                                                                                                                                                          AAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTGGCTAAATAT
                                                                                                                                                                                                                                                                                                                     ATTAAATGAAATTGGGAAATGTAGATGAAATAAATTTCTTCTATGTAGTTTAAGAAATTGA 1689
                                                                                                                                                                                                                                                                                                                                                                                                                           CCGACGCGCTTATGAGAACCCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCAT 1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GTTCAATGTTAGCAAGTACATGCCGTTTTGGACCCGTCGCAACCGCTATACCGTATCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGG 1449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GGGNAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAACAAAAATTATAATATAAGAAATGGAGTAAGGAACATTTCCTGTGGCTAAATAT 1749
                                                                                                                                                                                                                                                                                                                                                                        CCGACGCGCTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="rosette"

/dev_stage="4 - 7 weeks"
/clone_lib="A. thaliana, Columbia Col-0, rosette-2"
/clone_lib="A. thaliana, Columbia Col-0, site_2: SalI, cDNA
library was derived from untreated rosette tissue from
Arabidopsis thaliana, Columbia Col-0, at 4 - 7 weeks.
Plants were grown in 1:1:1 peat moss/vermiculite/perlite
soil at 22 deg. C +/- 3 deg. C under constant light, and
watered with fertilizer. cDNA synthesis was initiated
using a NotI-oligo(dT) primer. Double-stranded cDNA was
blunted, ligated to SalI adaptors, digested with NotI,
size-selected, and cloned into the NotI and SalI sites of
the pSPORT vector."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            service@genomesystems.com
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cultivar="Columbia Col-0"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Arabidopsis thaliana"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       clone="701545370"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 541.8; DB 9
Pred. No. 2.7e-98;
0; Mismatches 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MO 63134, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           487
                                                                                                                                                             67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1509
```

```
밁
                                                                                                 Ş
                                                                                                                                        밁
                                                                                                                                                                      Ş
                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 6
AV530853
   밁
                       5
                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                     멍
                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
MEDLINE
PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local
                                                                                                                                                                                                                                                                                                                130
   360
                                   370
                                                                      300
                                                                                                                                          240
                                                                                                                                                                                                            180
                                                                                                       310
                                                                                                                                                                         250
                                                                                                                                                                                                                                              190
                                                                                                                                                                                                                                                                                 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          548;
                                                                                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                                                                                                                                                                                                                                                                           10
                                                                                                                                                                                                                                                                                                                                                                                    70
                                                                                                                                                                                                                                                                                                                                                                                                                       ш
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Asamizu, E., Nakamura, Y., Sato, S. and Tabata, S.
Alarge scale analysis of cDNA in Arabidopsis thaliana: Generation of 12,028 non-redundant expressed sequence tags from normalized and size-selected cDNA libraries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AV530853
AV530853 Arabidopsis thaliana flower buds Columbia Arabidopsis thaliana cDNA clone FB010e01F 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The First Laboratory for Plant Gene Research
Kazusa DNA Research Institute
Yana 1532-3, Kisarazu, Chiba 292-0812, Japan
Email: asamizukazusa.or.jp, URL:http://www.kazusa.or.jp/en/plant/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AV530853
AV530853.1 GI:8691136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Contact: Erika Asamizu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA Res. 7 (3), 175-180 (2000)
20363093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis thaliana (thale cress)
GTTGCATGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAA
                       GTTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAA
                                                                                                                                                                                                                             CACCGTGACTGCCTTCCACCGCCGTCGTCCCCGGAGATTCTCTCCCTTTGGACAACAAGCACC
                                                                CGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGT
                                                                                                 CGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGT
                                                                                                                                      GGAACCACCTCTTCACCACCCAAAACCCCACCGAGCAATCTCACGATGGTCTCGATCTCTC
                                                                                                                                                                      GGAACCACCTCTTCACCACCAAAAACCCACCGAGCAATCTCACGATGGTCTCGATCTCTC
                                                                                                                                                                                                           CACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACC
                                                                                                                                                                                                                                                                             CCGAACAAACTTTATCCGGCGATCTTACCGTTTTACCCGCTTTTAGCCCGGTGGGTCCTCC
                                                                                                                                                                                                                                                                                                           -TTTTTTTTTTTTCGTTTTCAAAAACAAATCTTTGAATTTTATGGCAACCCGTCTTCT
                                                                                                                                                                                                                                                                                                                                                                                 TTTTTTTTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGTCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                      АЛАЛАЛА САССБАТАЛА ССБАЛА САТСЛА БСАЛА САЛАЛАЛАЛАЛА БАБАБА БАЛАТТА
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="rbutoeta."
/tissue_type="flower buds"
/clone_Ib="Arabidopsis thaliana flower buds Columbia"
/clone_Iib="Arabidopsis thaliana flower buds Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="taxon:3702"
/clone="FB010e01F"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /mol_type="mRNA"
/strain="Columbia"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      organism="Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           29.3%;
99.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 536.4;
Pred. No. 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .3e-97;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          μ
--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
419
                               429
                                                                  359
                                                                                                     369
                                                                                                                                                                                                                                                                             179
                                                                                                                                                                                                                                                                                                                189
                                                                                                                                                                                                                                                                                                                                                                                   129
                                                                                                                                                                                                                                                                                                                                                                                                                      60
                                                                                                                                                                                                                                                                                                                                                                                                                                                           69
                                                                                                                                      299
                                                                                                                                                                       309
                                                                                                                                                                                                           239
```

```
ACCESSION
VERSION
KEYWORDS
                              S
                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 7
AQ959076
LOCUS
   밁
                                                                                             Ś
                                                                                                                                  밁
                                                                                                                                                             Ś
                                                                                                                                                                                                  문
                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                     Matches 631;
                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                     Local
                                                                                                 1031 AAAGACCGACCAATCGTTTACAACACGATTCAGGCGTACTTGAGAGACGCCGGTGAGAGA 1090
                                                                 125
                                                                                                                                                                  971
                                                                                                                                                                                                                                    911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   540 TGAAGCTACT 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    430
                                                                                                                                  65
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Xiaoying Lin
The Institute for Genomic Research
9712 Medical Center Dr., Rockville,
Tel: 301 838 0200
Fax: 301 838 0208
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 (bases 1 to 746)
Buell, C.R., Lin, X., Pai, G., Barnstead, M., Bowman, C., Utterbach, T., Feldblyum, T., Liang, F., Creasy, T. and Fraser, C.M.
Genomic survey sequencing of Landsberg erecta ecotype of Arabidopsis thaliana and identification of sequence-based
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Seq primer: TF
Class: shotgun.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AQ959076
AQ959076.1 GI:6786777
GSS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: at@tigr.org
For addtional information,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Unpublished (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis thaliana (thale cress)
Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              survey sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AQ959076
TEREH17TFB LERE Arabidopsis thaliana
                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          polymorphisms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           rosids; eurosids
                                                                                                                                                                ATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGAC 1030
                                                                                                                                                                                                                       CTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTG
                            CTGCATTTGGCAGTACAAAATGCTGAGAAAGAGAATGTTCCTATGGGGTTCAAGTTGGTG 1150
                                                                                                                                                                                                  ATCCTCCAACCCGCGATCGATTACATGGCTTATTCATCGGCGATCATGTTCAATGCTGAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGACCATTTTTGCGCCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGAAGCTACT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCCTTGTGAAAAGTACGTTTTA
                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                   /organism="Arabidopsis thallana"

/mol type="genomic DNA"

/strain="LANDSBERG ERECTA"

/db_xref="taxon:3702"
                                                                                                                                                                                                                                                                                                                                                       sheared
                                                                                                                                                                                                                                                                                                                                              /note=\overline{}^{0}Organ: Leaf, Vector: pUC19JK, Total genomic DNA was sheared to 0.6-0.8 Kbp before ligation."
                                                                                                                                                                                                                                                                                                                                                                                   /clone_lib="LERE"
                                                                                                                                                                                                                                                                                                                                                                                                      /clone="LEREH17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 559
                                                                                                                                                                                                                                                                                  28.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          II; Brassicales; Brassicaceae; Arabidopsis
                                                                                                                                                                                                                                                                   <u>.</u>
                                                                                                                                                                                                                                                                                  Score 517.2;
Pred. No. 2e-
                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         see http://www.tigr.org/tdb/at/at.html
                                                                                                                                                                                                                                                                                  2e-93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA
                                                                                                                                                                                                                                                                                                   DB 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NA linear
genomic clone
                                                                                                                                                                                                                                                                   18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20850,
                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LEREH17,
                                                                                                                                                                                                                                                                   93;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GSS 28-JAN-2000
EREH17, genomic
                                                                                                                                                                                                                                                                   Gaps
 244
                                                                                                                                                                                                                                     970
                                                                 184
                                                                                                                                  124
                                                                                                                                                                                                  64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   539
                                                                                                                                                                                                                                                                   ۲,
```

```
RESULT 8
AV563245/c
                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S
                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          멍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ś
                                                                                                                                                                                                                                                                                                                          JOURNAL
MEDLINE
                                                                                                                                                                                                                                                                                                    PUBMED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1151
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 725
                                                                                                                                                                                                                                                                                                                                   Asamizu, E., Nakamura, Y., Sato, S. and Tabata, S.
A large scale analysis of cDNA in Arabidopsis thaliana: Generation of 12,028 non-redundant expressed sequence tags from normalized and size-selected cDNA libraries DNA Res. 7 (3), 175-180 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Arabidopsis thaliana
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AV563245 Arabidopsis thaliana green siliques Columbia Arabidopsis thaliana cDNA clone SQ183h04F 3', mRNA sequence.

AV563245
                                                                                                                                                                    The First Laboratory for Plant Gene Research
Kazusa DNA Research Institute
Yana 1532-3, Kisarazu, Chiba 292-0812, Japan
Email: asamizu@kazusa.or.jp, URL:http://www.kazusa.or.jp/en/plant/
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 518)
Asamizu, E., Nakamura, Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Arabidopsis thaliana (thale cress)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AV563245.1 GI:8734671
                                                                                                                                                                                                                                                                                Contact: Erika Asamizu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATGGCCACCGGAGCTCATGACC 746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATGGCCACCGGAGCTCATGACC 1559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAACCGGGGAATG 1537
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCA 1417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCTCTCGCAACACATAACGCTGATTCG 1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATG 1270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GACCTCGGGATTGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCG 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GGTTTACTAATTGTAGAAATGTTTTTGATTTCAGGGAGACTTGCGTCGAGGAAAGCGAGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGAAAGCATCAAACGGTTCTGGTTTCGGTGTCGTTCTCGCAACACATAACGCTGATTCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTCCACGACACAATTCAGGATACTCACTCTTGTTACAATGATTGTATGACATTCCTGATG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AGAGGGGCTTACATGTCTAGCGAAGCTAGCTTGGCGGATTCCCTGGGTTGCAAGTCGCCA 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAGGGGCTTACATGTCTAGCGAACGTAGCTTGGCGGATTCCCCTGGGTTGCAAGTCGCCA 1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----GGGAGACTTGCGTCGAGGAAAGCGAGT 1357
tissue_type="green siliques"
/clone_lib="Arabidopsis thaliana green siliques Columbia"
                                                                                   mol_type="mRNA"
strain="Columbia"
                                                                                                                             organism="Arabidopsis"
                                            _xref="taxon:3702"
lone="SQ183h04F"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST 07-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             424
```

```
REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                  SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 9
CD813513
                                   FEATURES
                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   뮹
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    片
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              맑
                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                  source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
nes 513; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1381 CGGGAAGATAGAGITTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAA 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1681 AGAAATTGAAAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1441 GAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCCTCGCAACCGCTATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1321 CGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAA 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1801 ATTCACCTTATCAATAAAAATGCTTTTTACTTT 1833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1741 GCTAAATATTTTTCATGAGGGACTATGTTTTTACTATCAATATATCATTCACAAATGTAT 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              518 CGCTGATTCGGGGAGACTTGCGTCGAGGAAAGCGAGTGACCTCGGGATCGATAAACAGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38 ATTCACCTTATCAATAAAAATGCTTTTTACTTT
                                                                                                                                                                                                                                                                                                                                                 sequence.
CD813513
CD813513.1
EST.
                             This sequence has been generated in the framework of the plant genomics programme 'Genoplante' (http://www.genopland http://genoplante-info.infobiogen.fr).
                                                                                                                                                                                                                                         Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Brassica.

1 (bases 1 to 745)
                                                                                                                                                                                                                                                                                                                Brassica napus (rape)
Brassica napus
                                                                                                                                                                                                                                                                                                                                                                                                                      CD813513 745 bp mRNA linear BN15.019002F020121 BN15 Brassica napus cDNA clone
                                                                                                Tel: 33 1 69 47 54 00 Fax: 33 1 69 47 54 10
                                                                                                                                                                                       Genoplante, a major partnership french program Unpublished (2003)
                                                                                                                                                        Genoplante
                                                                                                                                                                       Contact: Genoplante
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TATGGAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTA 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AGAAATTGAAAACAAAAATTATAATATAAGAAATGGAGTAGGTAAGAACATTTCCTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TATGGAGCCATTAAATGAAATTGGGAAATGTAGATGAATAAATTTCTTCTATGTAGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GTATCTTCTCCGACGCGTTATGAGAACCGGGGAATGATGGCCACCGGAGCTCATGACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GAGAGCAGGGTTCAATGTTAGCAAGTACATGCCGTTTGGACCCGTCGCAACCGCTATACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CGGGAAGATAGAGTTTGCACAGCTATATGGTATGTCAGATGCATTGTCCTTCGGGTTAAA
                                                                                                                                     rue Henri Rochefort 91025 EVRY CEDEX France
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
/organism="Brassica napus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Vector: pBluescriptII SK-; Site_1:
                                                                                                                                                                                                                                                                                                                                                                      GI:32495453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28.0%; Score 513; DB 9;
100.0%; Pred. No. 1.6e-92;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                [http://www.genoplante.com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                          in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    518;
                                                                                                                                                                                                                                                                                                                                                                                                                      EST 10-JUL-2003
BN15019002, mRNA
                                                                                                                                                                                                        plant genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EcoRI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0,
                                                                                   french
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Site_2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
```

```
RESULT 10
CD837236
                                                                     KEYWORDS
                                                                                                                                                                                                                                  밁
                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                          5
                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         멂
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ś
                                                                                       VERSION
                                                                                                       ACCESSION
                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S
                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local
                                                                                                                                                                                                                                  687
                                                                                                                                                                                                                                                                                                                               013
                                                                                                                                                                                                                                                                                                                                                               567
                                                                                                                                                                                                                                                                                                                                                                                              550
                                                                                                                                                                                                                                                                                                                                                                                                                            507
                                                                                                                                                                                                                                                                                                                                                                                                                                                            490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         250 GGAACCACCTCTTCACCCAAAAACCCACCGAGCAATCTCACGATGGTCTCGATCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              585;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10 АЛАЛАЛАСА СССАТАЛАЛАСССАЛАСАТСЛА ССАЛАСЛАЛАЛАЛАЛАЛА СВОЕВЕНТЕ
Brassica napus (rape)
Brassica napus
Brassica napus
Brassica napus
Sukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                  757 bp mRNA linear EST 10-JUL-200:
BN45.051111F020107 BN45 Brassica napus cDNA clone BN45051111, mRNA
sequence.
CD837236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 70
                                                                                    CD837236.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                        AACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCA
                                                                                                                                                                                                                                                                                             CTCTGGTGATGATAATATGCAACATTTCATTCGAACCATTGAAGCTGCCAAGTCCTTACC
                                                                                                                                                                                                                                                                                                                                                                                         TGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                      TGACCATTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTA
                                                                                                                                                                                                                               AACATCCCAATTTAGCTCAGTGGTCGTGAAAATAACTGGCATTTGTCCA
                                                                                                                                                                                                                                                                                                                            ATCTTGTGATGATAACATGCAACAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACC
                                                                                                                                                                                                                                                                                                                                                         CGAGGCGACGGGTCTTAAAGGTATGCTTGTGTACGGCGTTGAACACGCCGATGACGCTGC
                                                                                                                                                                                                                                                                                                                                                                                                                         TGACCATTTCTGTGCCGGTGAAGACGCCAGCGCCGCCGCGAACGTGTGAGGAGCGTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACTCATGGACAACGCTTTGACACGTGGCATGGTCCTTGGCCTTGTGAAAGGTACGTTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTGCATGCGGCGGCCATAGGTCCAATGGTGGATGTGGGATCGTGGGTCATGAGCTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CGACCAGGCCCGGCTCTTCGCCTCTGTCCCCACCCCGACCTCCTCCTCCGTTCCACCGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGAGCCACCACTCCACCACCAAAACACA---ACCAAACTCACAATGACATCGATCTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GTTGCATGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ccgaacaaacrrrarccggcgarcrraccgrrraccggcrrrragcccggrgggrccrcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CACCGTGACGGCTTCAACAGCCGCCGTCCCGGAGATTCTCTCCTTCGGACAACAAGCACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CCGAACAAACTTTATCCGGCGACCTCACTGTTTCTCCTCTTTACGACCGGTGGGTTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TTTATTTATTTTTCGTTTCAĀĀĀĀĀGĀĀĀTCTTTGĀĀTTTTĀTGGCĀĀCCCGTCTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TTTTTTTTTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGTCTTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AGAAGAGGAGAAAAAAACAGCGATAAAAGCCGAAGAAACATCAAAAGAGAGAAGAACACAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:3708"
/clone="BN15019002"
/tissue_type="seed"
/clone_lib="BN15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /mol_type="mRNA"
/cultivar="Jet neuf"
                                                                                      GI:32519176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches 121; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 499.4; DB 1
Pred. No. 7.5e-90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 14; Length 745;
                                                                                                                                                                                                                                                             718
                                                                                                                                               EST 10-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                            669
                                                                                                                                                                                                                                                                                                                                                                                         609
                                                                                                                                                                                                                                                                                                                                                                                                                         566
                                                                                                                                                                                                                                                                                             989
                                                                                                                                                                                                                                                                                                                                                          626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      489
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   369
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1;
```

```
밁
                                                  Ş
                                                                                                                       맑
                                                                                                                                                                       Ś
                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                 밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         跊
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local S
Matches 603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                       552
                                                                                                                                                                                                                                            492
                                                                                                                                                                                   551
                                                                                                                                                                                                                                                                                                     491
                                                                                                                                                                                                                                                                                                                                                              432
                                                                                                                                                                                                                                                                                                                                                                                                                          431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       75
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              603;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93, rue Henri Rochefort 91025 EVRY CEDEX France Tel: 33 1 69 47 54 00 Fax: 33 1 69 47 54 10 Fax: 33 1 69 47 54 10 Fax: 31 69 47 54 10 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 Fax: 31 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genoplante, a major
Unpublished (2003)
Contact: Genoplante
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genoplante.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Genoplante
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                rosids; eurosids II; Brassicales; Brassicaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TTGCATGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAA
                                                                                                                    GAGGCAACGGGTCTTAAAGGTATGCTTGTGTACGGCGTTGAACACGCCGATGATGCTGCC
                                                                                                                                                                                                                                                                                                  GACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                CTTATGGACGCTTCGGTGACGCCTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTAT
                                                        TCTTGTGATGATAACATGCAACAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GACCAAGCCCGTCTTTGCCTCTGTCCCTACCTCCGACCTTCTCCGCTCCACGGCCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTG
TCTTGTGATGATAACATGCACCATTTCCTTCGAACCATTGAAGCTGCCAAATCGTTACCA
                                                                                                                                                                             GAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTA
                                                                                                                                                                                                                                                                                                                                                           CTCATGGAAACCGCGTTAACACGTGACATGGTCCTTGGACTTGTGAAAAGTACGTTTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CTGCATGCGGCGGCGATAGGTCCTATGGTGGATCTTGGATCGTGGGTCATGAGTTCTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAGCCGCCTGTCCACCACCAAAAACCAAAACG---AAGCTCACCATGACATCGATCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GAACCACCTCTTCACCACCCAAAAACCCCACCGAGCAATCTCACGATGGTCTCGATCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CGAACAAACTTTATCCGGCGATCTTACCGGTTTACCCGCTTTTAGCCCGGTGGGTCCTCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACAATTTTATTTTCGTTTTATCAAGAACATCTTTGAATTTTATGGCAGCCCGCCTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTTTTTTTTTCGTTTTCAAAACAAAATCTTTGAATTTTATGGCAACCCGTCTTCTC 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AGAGAAGAAAAGAAAGCGATAAAAGCGAGAAGCCCTAAGAAACATCAAAAAGACAAGAAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ACCGTGACCGCTTCAACCGCCGTCGTCCCGGAGATACTCTCCTTTCGGACAACGAGCGCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGAACAAACTTTATCCGTCGTCCTTACCGTTTCTCCGCTTTGAACCCGGTGGGTCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 757)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     http://genoplante-info.infobiogen.fr).
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="BN45051I11"
/tissue_type="seed"
/clone_lib="BN45"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    db_xref="taxon:3708"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /mol_type="mRNA"
/cultivar="Jet neuf"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            organism="Brassica napus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        partnership
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches 140;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 496; DB 14;
Pred. No. 3.6e-89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        french program in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Brassica
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    plant genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             370
671
                                                                                                                    611
                                                                                                                                                                             610
                                                                                                                                                                                                                                                                                                                                                                                                                   490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         74
                                                                                                                                                                                                                                         551
                                                                                                                                                                                                                                                                                                  550
                                                                                                                                                                                                                                                                                                                                                           491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2;
```

ACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTTCTG

```
Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
AUTHORS
TITLE
                                                                          Ś
                                                                                                             B
                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOURCE
ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 11
CD832104
                                                                                                                                                                                     밁
                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                           В
                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                     S
                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                            308
                                                                                                               270
                                                                                                                                                  248
                                                                                                                                                                                     210
                                                                                                                                                                                                                    188 CCCACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCA 247
                                                                                                                                                                                                                                                             150
                                                                                                                                                                                                                                                                                   128 CTCCGAACAAACTTTATCCGGCGATCTTACCCGTTTACCCGGTTTTAGCCCGGTTGGGGTCCT 187
                                                                                                                                                                                                                                                                                                                                                                           83
                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      596;
                                                                                                                                                                                                                                                                                                                                  98 TTCTTTTTTG-----TTTCAAAAGGAAAATCTTTGAATTTTATGGCAACCCGTCTC 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ထ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This sequence has been generated in the framework of the french plant genomics programme 'Genoplante' (http://www.genoplante.com and http://genoplante-info.infobiogen.fr).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Tel: 33 1 69 47 54 00 Fax: 33 1 69 47 54 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genoplante
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genoplante, a major partnership french program in plant genomics Unpublished (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids; Brassicales; Brassicaceae; Brassica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BN40.062A09F011227 BN40 Brassica napus cDNA clone BN40062A09, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Genoplante
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Brassica napus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Brassica napus (rape)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CD832104
CD832104.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genoplante.
GTGTTGCATGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCT 427
                                                          TCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCC 367
                                                                                                                                            CCGGAACCACCTCTTCACCACCCAAAAACCCACCGAGCAATCTCACGATGGTCTCGATCTC 307
                                                                                                           CCAGAGCCACCTCTCCACCACCAAAAACCCCA---ATGAAGCTCACCATGACATCGATCTC
                                                                                                                                                                                                                                                                                                                                                                     TATTTTTTTTTTCGTTTTCGAAAAACAAATCTTTGAATTTTATGGCAACCCGTCTT 127
                                   TCCGACCAAGCCCGTCTCTTCTCCTCTATGCCCACATCCGTCCTCCTCCGCTCCACCGCC 386
                                                                                                                                                                                 CTCCGAACTAACTTTATCCGGCGTCCTTACTGTTTCTCCGCTTTAAAACCGGTGGGTCCA 209
                                                                                                                                                                                                                                                                                                                                                                                                        AAACGAGTGAGTGATTGCTTCGGGGGG 757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAACGAGTGAGCGATCTGCTGCGGTGG 757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACATOTOACTTTAGOTOAGTGGTCGTGAAGAT-ACCGCGATTTGTCCCATTAGTCTTCTA 730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 754)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      rue Henri Rochefort 91025 EVRY CEDEX France
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Brassica napus"
/mol type="mRNA"
/cultivar="Jet neuf"
/db xref="taxon:3708"
/clone="BN4006ZA09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /tissue_type="seed"
/clone_lib="BN40"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GI:32514044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 492.4; DB 14; Length 754; Pred. No. 1.9e-88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches 121; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      754 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TURNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EST 10-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                           326
                                                                                                                                                                                                                                                                                                                                                                                                          97
```

Ś

1349 AAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATAT 1408

Matches 482; Best Local Similarity

Conservative

0; Mismatches

Indels

0

Gaps

```
VERSION
KEYWORDS
                                                                   ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            닭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AV556853/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
MEDLINE
                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                 Bource
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               728 CTGAAACG 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            387 GTGCTGCATGCGGCCGCGATAGGTCCCATGGTGGATGTTGGATCGTGGGTCATGAGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   488 TATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              447 AAACTCATGGACACAGCCTTGACACGTGGTATGGTCCTTGGCCTTGTGAAAAGTACGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    428 AAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTT
                                                                                                                                                                                                                                                                                              Yana 1532-3, Kisarazu, Chiba 292-0812, Japan
Email: asamizu@kazusa.or.jp, URL:http://www.kazusa.or.jp/en/plant/.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                             Contact: Brika Asamizu
The First Laboratory for Plant Gene Research
Kazusa DNA Research Institute
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 (bases 1 to 483)
Asamizu,E., Nakamura,Y., Sato,S. and Tabata,S.
A large scale analysis of cDNA in Arabidopsis thaliana: Generation of 12,028 non-redundant expressed sequence tags from normalized and size-selected cDNA libraries
DNA Res. 7 (3), 175-180 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AV556853 Arabidopsis thaliana green siliques Columbia Arabidopsis thaliana green siliques Columbia Arabidopsis thaliana cDNA clone SQ053h12F 3', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Arabidopsis thaliana (thale cress)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AV556853.1 GI:8728268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CCAACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGCCATTTGTCCAATTAGTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTAAAACG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCTACATCTCATTTTAGCTCAGTGGTCGTGAAGAATACCGCGATATGTCCCCATCAGTCTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GCCACTTGTGATGAGAACATGCAACACTTCCTTCGAACCATCGAAGCAGCAAAATCCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GTATCTTGTGATGATAACATGCAACAATTCATTCGAACCATTGAAGCTGCCAAATCTTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TACGAAGCCTCGGGTCTTAAAGGTATGCTTGTGTACGGCGTGGAACATGCCGATGACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATGACCACTTCTGCGCCGGTGAAGACGCCGCCGCGGCTGCGGAACGCGTGAGGAGCGTT
                                                                                     /tissue_type="green siliques"
/clone_lib="Arabidopsis thaliana green siliques Columbia"
/note="Vector: pBluescriptII SK-; Site_1: EcoRI; Site_2:
XhoI"
                                                                                                                                                                   /clone="SQ053h12F"
                                                                                                                                                                                                                                    /organism="Arabidopsis thaliana'
/mol_type="mRNA"
                                                                                                                                                                                            /db_xref="taxon:3702"
                                                                                                                                                                                                              /strain="Columbia"
                                                                                                                                                                                                                                                                                 . 483
  26.3%;
Score 481.4; DB 9
Pred. No. 3.6e-86;
                      DB 9;
                      Length 483;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EST 06-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               446
```

밁

67

96

```
REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 13
CD813554
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
ORGANISM
                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
  Best Local Similarity
                        Query Match
                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1769
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          w
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CD813554 720 bp mRN/
BN15.020B05F020211 BN15 Brassica napus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; cosids; eurosids II; Brassicales; Brassicaceae; Brassica.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Brassica napus (rape)
Brassica napus
                                                                                                                                                                                                                                                                                                                                                                 Genoplante
                                                                                                                                                                                                                                                                                                                                                                                    Contact: Genoplante
                                                                                                                                                                                                                                                                                                                                                                                                      Genoplante, a major partnership french 
Unpublished (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                            Genoplante.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CD813554.1 GI:32495494
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCCTTATGAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TTTTACTATCAATATATCATTCACAAATGTATATTCACCTTATCAATAAAAATGCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TTTTACTATCAATATATCATTCACAAATGTATATTCACCTTATCAATAAAAATGCTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAGAAATGGAGTAAGAACATTTCCTGTGGCTAAATATTTTTCATGAGGGACTATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAGAAATGGAGTAAGAACATTTCCTGTGGCTAAATATTTTTTCATGAGGGACTATGT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAAATTGAAAACAAAAATTATAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TGTAGATGAATAAATTTCTTCTATGTAGTTTAAGAAATTGAAAAAACAAAAAATTATAATAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AGATTAATCGCCGGGATTGCGTAAAGAGAGAGTATGGAGCCATTAAATGAAATTGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AGATTAATCGCCGGGATTGCGTAAAGAGAGAGTATGGAGCCATTAAATGAAATTGGGAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CGGGGAATGATGGCCACCGGAGCTCATGACCGTCAACTCATGAGGATGGAACTTAAGAGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATGCCGTTTGGACCCGTCGCAACCGCTATACCGTATCTTCTCCGACGCGCTTATGAGAAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GGTATGTCAGATGCATTGTCCTTCGGGTTAAAGAGAGCAGGGTTCAATGTTAGCAAGTAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAAGCGAGTGACCTCGGGATCGATAAACAGAACGGGAAGATAGAGTTTGCACAGCTATAT 424
                                                                                                                                                                                                                 : 33 1 69 47 54 00
: 33 1 69 47 54 10
s sequence has been generated in the framework of the french nt genomics programme 'Genoplante' (http://www.genoplante.com.http://genoplante-info.infobiogen.fr).
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 720)
                                                                                                                                                                                                                                                                                                                                               rue Henri Rochefort 91025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1831
                                                                        /clone="BN15020B05"
/tissue_type="seed"
/clone_lib="BN15"
                                                                                                                                  /mol_type="mRNA"
/cultivar="Jet neuf"
/db_xref="taxon:3708"
                                                                                                                                                                                           organism="Brassica napus"
  82.4%;
  Score 475.4; DB 14;
Pred. No. 4.9e-85;
                                                                                                                                                                                                                                                                                                                                               EVRY
                                                                                                                                                                                                                                                                                                                                                 CEDEX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                      program in plant genomics
                                                                                                                                                                                                                                                                                                                                                 France
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear EST 10-JUL-2003
A clone BN15020B05, mRNA
                  Length 720;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1768
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1648
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1468
                                                                                                            REFERENCE
AUTHORS
TITLE
                                                                                                                                                                                                                                                               ACCESSION
VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                             RESULT 14
CD835442
LOCUS
                                                                            COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                            밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    맑
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    뮍
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ঠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ś
                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                            989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   548
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        128
                                                                                                                                                                                                                                                               sequence.
CD835442
CD835442.1
EST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   573;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37
93, rue Henri Rochefort
Tel: 33 1 69 47 54 00
Fax: 33 1 69 47 54 10
                                                                                            Genoplante, a major partnership Unpublished (2003)
                                                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids; eurosids II; Brassicales; Brassicaceae; Brassica.
                                                                                                                                                                                                                             Brassica napus
                                                                                                                                                                                                                                                                                                                                         CD835442 713 bp mRNA linear EST 10-JUL-2003 BN45.045107F011229 BN45 Brassica napus cDNA clone BN45045107, mRNA
                                                        Genoplante
                                                                      Contact: Genopiante
                                                                                                                                                                                                                                               Brassica napus (rape)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genoplante.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAACATCTCACTTTAGCTCAGTGGTTGTGAAGAT 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAACTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCCTTGTGAAAAGTACGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CCTACATCTCACTTTAGCTCAGTGGTCGTGAAGAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GCCACTTGTGATGAGAACATGCAACACTTCCTTCGAACCATCGAAGCAGCAGAAAATCCTTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GTATCTTGTGATGATAACATGCAACAATTCATTCGAACCATTGAAGCTGCCAAATCTTTA 667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TATGAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TATGACCACTTCTGCGCCGGTGAAGACGCCGCCGCGGCTGCGGAACGCGTGAGGAGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TCCGATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CTCCGAACAACTTTATCCGGCGATCTTACCGTTTACCCGCTTTTAGCCCGGTGGGTCCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TTCTTTTTTTG-----TTTCAAAAGGAAAATCTTTGAATTTTATGGCAACCCGTCTC 148
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TACGAAGCTTCGGGTCTTAAAGGTATGCTTGTGTACGGCGTGGAACATGCCGATGACGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TATGACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAACTCATGGACACCGCCTTGACACGTGGTATGGTCCTTGGCCTTGTGAAAAGTACGTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GTGCTGCATGCGGCCGCGATAGGTCCCATGGTGGATGTTGGATCGTGGATCATGAGCTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              grerrecarecegeegearagerecrarecreesecraegeaceregereareagerer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TCCGACCAAGCCCGTCTCTTCTCCTCTATGCCCACATCCGCTCTCCTCCGCTCCACCGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CCAGAGCCACCTCTCCACCACCAAAAACCCA---ATGAAGCTCACCATGACATCGATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CCGGAACCACCTCTTCACCACCCAAAACCCCACCGAGCAATCTCACGATGGTCTCGATCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cccaccereactrectrecacceccerereces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CTCCGAACTAACTTTATCCGGCGTCCTTACCGTTTCTCCGCTTTAAAACCGGTGGGTCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TATTTTTTTTTTTTCGTTTTCAAAAACAAATCTTTGAATTTTATGGCAACCCGTCTT 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AGGAGAAAAGAGCGATAAATCCGAAAAAGCCCTAAGAAACATCAAAAGAGAATAAAAACAAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CCCACCGTAACGGCTTCAACAGCCGCCGTCCCGGATATTCTCTCCTTCGGACAACAAGAA
                                                                                                                                                  (bases 1 to 713)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                     GI:32517382
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                      91025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches 111; Indels
                                      EVRY
                                                                                                                french
                                    CEDEX France
                                                                                                              program in
                                                                                                              plant genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
```

547

487 445 427 385 367 325 307 247 208 187

268

607 565

589

Ś 문 Ś 밁 Ş 밁 Ş B Ś 밁 Ś 밁 Ś 밁 Ś

ORIGIN

```
RESULT 15
CD825384
 ACCESSION
                                                                                                    뭐
                                                                                                                       Ş
                                                                                                                                                   밁
                                                                                                                                                                          S
                                                                                                                                                                                                     밁
                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                       밁
                                                                                                                                                                                                                                                                                                                             Ś
                                                                                                                                                                                                                                                                                                                                                         밁
                                                                                                                                                                                                                                                                                                                                                                                Ś
                                                                                                                                                                                                                                                                                                                                                                                                          밁
                                                                                                                                                                                                                                                                                                                                                                                                                                   Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                              문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                멼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                밁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ś
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  윰
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  문
                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                    676
                                                                                                                             671
                                                                                                                                                     616
                                                                                                                                                                            611
                                                                                                                                                                                                       556
                                                                                                                                                                                                                                                                                                         436
                                                                                                                                                                                                                                                                                                                                431
                                                                                                                                                                                                                                                                                                                                                           376
                                                                                                                                                                                                                                                                                                                                                                                   371
                                                                                                                                                                                                                                                                                                                                                                                                           316
                                                                                                                                                                                                                                                                                                                                                                                                                                    311
                                                                                                                                                                                                                                                                                                                                                                                                                                                              259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                139
                                                                                                                                                                                                                               551
                                                                                                                                                                                                                                                        496
                                                                                                                                                                                                                                                                               491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    564;
 sequence.
CD825384
                        BN25.060J17F011129 BN25 Brassica napus cDNA clone BN25060J17, mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This sequence has been generated in the framework of the french plant genomics programme 'Genoplante' (http://www.genoplante.com and http://genoplante-info.infobiogen.fr).
                                       CD825384
                                                                                                                  ACATCTCACTTTAGCTCAGTGGTTGTGAAGATAACTGC 708
                                                                                                                                                                                                                                                                      GACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGTGAGAAGCGTTTAT
                                                                                                                                                                                                                                                                                                                        CTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAGTACGTTTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCCTTTGGACAACAAGCACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGAACAAACTITATCCGGCGATCTTACCGTTTACCCGCTTTTAGCCCGGTGGGTCCTCCC
                                                                                                                                                  TCTTGTGATGATAACATGCACCATTTCCTTCGAACCACTGAAGCTGCCAAATCGTTACCA
                                                                                                                                                                            TCTTGTGATGATAACATGCAACAATTCATTCGAACCATTGAAGCTGCCAAATCTTTACCA
                                                                                                                                                                                                    GAGGCAACGGGTCTTAAAGGTATGCTTGTGTACGGCGTTGAACACGCCGATGATGCTGCC
                                                                                                                                                                                                                            GAAGCTACTGGTCTTAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTA 610
                                                                                                                                                                                                                                                                                                                                                        CTGCATGCGGCGATAGGTCCTATGGTGGATCTTGGATCGTGGGTCATGAGTTCTAAA
                                                                                                                                                                                                                                                                                                                                                                               TTGCATGCGGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAA
                                                                                                                                                                                                                                                                                                                                                                                                           GACCAAGCCCGTCT
                                                                                                                                                                                                                                                                                                                                                                                                                                GATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                          GAGCCGCCTGTCCACCACCAAAAACCAAAACG---AAGCTCACCATGACATCGATCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GAACCACCTCTTCACCACCCAAAACCCCACCGAGCAATCTCACGATGGTCTCGATCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CGAACAAACTTTATCCGTCGTCCTTACCGTTTCTCCGCTTTGAACCCGGTGGGTCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACAATTTTATTTTCGTTTTATCAAGAACATCTTTGAATTTTATGGCAGCCCGCCTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         АААААА СА GCGATAAAACCGAAACATCAAGCAAACAAAAAAAAAAGAGAAAGAGAAATTAT
                                                                                                   ACATCTCACTTT-GCTCAGTGGTCGTGAAGATAACCGC 712
                                                                                                                                                                                                                                                      GACCATTTCTGCGCCGGTGAAGACGCTGACGCAGCCGCGCAGCGTGTAAGAAGTGTTTAC
                                                                                                                                                                                                                                                                                                      CTCATGGAAACCGCGTTAACACGTGACATGGTCCTTGGACTTGTGAAAAGTACGTTTTAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCGTGACCGCTTCAACCGCCGTCGTCCCGGAGATACCCTTCCGGACAACAAGCGCCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TTTTTTTTGTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTATGGCAACCCGTCTTCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AGAGAAGAAAAGAAAAGCGATAAAAGCGAGAAGCCTTAAGAAACATCAAAAGACAAGAAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /cultivar="Jet neuf"
/db_xref="taxon:3708"
/clone="BN45045I07"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="seed"
/clone_lib="BN45"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                organism="Brassica napus"
|mol_type="mRNA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               25.3%;
                                                                                                                                                                                                                                                                                                                                                                                                        CTTTGCCTCTGTCCCTACCTCCGACCTTCTCCGCTCCACGGCCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches 130;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 463; DB 14;
Pred. No. 1.5e-82;
                                     dq 869
                                     mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 713;
                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                    EST 10-JUL-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.
                                                                                                                                                   675
                                                                                                                                                                                                                                                                                                                                                        435
                                                                                                                                                                                                                                                                                                                                                                                430
                                                                                                                                                                                                                                                                                                                                                                                                                                   370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         130
                                                                                                                                                                            670
                                                                                                                                                                                                     615
                                                                                                                                                                                                                                                                               550
                                                                                                                                                                                                                                                                                                       495
                                                                                                                                                                                                                                                                                                                                490
                                                                                                                                                                                                                                                                                                                                                                                                          375
                                                                                                                                                                                                                                                                                                                                                                                                                                                           315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
KEYWORDS
SOURCE
ORGANISM
뭐
                    δ
                                               片
                                                                    5
                                                                                               ᅜ
                                                                                                                  ঠ
                                                                                                                                                 밁
                                                                                                                                                                        δ
                                                                                                                                                                                                   밁
                                                                                                                                                                                                                         Ś
                                                                                                                                                                                                                                                    밁
                                                                                                                                                                                                                                                                       S
                                                                                                                                                                                                                                                                                                   밁
                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                      밁
                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                           문
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
565
                                                505
                                                                        491
                                                                                                  445
                                                                                                                          431
                                                                                                                                                  385
                                                                                                                                                                                                    325
                                                                                                                                                                                                                            311
                                                                                                                                                                          371
                                                                                                                                                                                                                                                      268
                                                                                                                                                                                                                                                                              251
                                                                                                                                                                                                                                                                                                      208
                                                                                                                                                                                                                                                                                                                                191
                                                                                                                                                                                                                                                                                                                                                        148
                                                                                                                                                                                                                                                                                                                                                                                131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             545;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1
                                                                                                                                                                                                                                                                                                                                                                                                          88
                                                                                                                                                                                                                                                                                                                                                                                                                                                           28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Genoplante
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CD825384.1
EST.
GAGGCAACGGGTC
```

```
This sequence has been generated in the framework of the french plant genomics programme 'Genoplante' (http://www.genoplante.com and http://genoplante-info.infobiogen.fr).

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93, rue Henri Rochefort
Tel: 33 1 69 47 54 00
Fax: 33 1 69 47 54 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Genoplante, a major partnership french program in Unpublished (2003)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Genoplante
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Brassica napus (rape)
                                                                           GACCATTTTTGCGCCGGTGAAGATGCCGACGCAGCCGCTGAGCGCGCTGAGAAGCGTTTAT
                                                                                                                                                                                                                                                                                                                                          GATCAAGCCCGTCTTTTCTCCTCTATCCCAACCTCTGATCTCCTCCGTTCCACCGCCGTG
                                                                                                                                                                                                                                                                                                                                                                                                GAGCCGCCTGTCCACCCAAAACCAAAACG---AAGCTCACCATGACATCGATCTGTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CGAACAAACTTTATCCGGCGATCTTACCGGTTTACCCGCTTTTAGCCCGGTGGGTCCTCCC
GAAGCTACTGGTCTTAAAAGGGATGCTTGTCTATGGCGTCGAACACGCCGATGACGCTGTA 610
                                                                                                                                                                                                                     CTGCATGCGGCGGCGATAGGTCCTATGGTGGATCTTGGATCGTGGGTCATGAGTTCTAAA
                                                                                                                                                                                                                                                               TTGCATGCGGCGATAGGTCCTATGGTCGACCTAGGGACGTGGGTCATGAGCTCTAAA
                                                                                                                                                                                                                                                                                                                                                                                                                                        GAACCACCTCTTCACCACCCAAAAACCCACCGAGCAATCTCACGATGGTCTCGATCTCTCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TTTTTTTTTGTTTTCGTTTTCAAAAACAAAATCTTTGAATTTTTATGGCAACCCGTCTTCTC 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CTCATGGAAACCGCGTTAACACGTGACATGGTCCTTGGACTTGTGAAAAGTACGTTTTAT
                                                                                                                                                                 CTTATGGACGCTTCGGTGACGCGTGGCATGGTTTTAGGGCTTGTGAAAAAGTACGTTTTAT
                                                                                                                                                                                                                                                                                                              GACCAAGCCCGTCTTTTGCCTCTGTCCCTACCTCCGACCTTCTCCCGCTCCACGGCCGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACCGTGACTGCTTCCACCGCCGTCGTCCCGGAGATTCTCTCTTTTGGACAACAAGCACCG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CGAACAAACTTTATCCGTCGTTACCGTTTCTCCGCTTTGAACCCGGTGGGTCAGCCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACAATTTTATTTTCGTTTTATCAAGAACATCTTTGAATTTTATGGCAGCCCGCCTCCTC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AGAGAAGAAAAGGAAAAGCGATAAAAGCGAGAAGCCTTAAGAAACATCAAAAAGACAAGGAAA 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:3708"
/clone="BN25060J17"
/tissue_type="seed"
/clone_Tib="BN25"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol_type="mRNA"
/cultivar="Jet neuf"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                organism="Brassica napus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     . 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GI:32507324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 456.4; DB 14; Length Pred. No. 3.2e-81; O; Mismatches 126; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91025 EVRY CEDEX France
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                plant genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ω
••
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                      550
                                                                                                                                                                                                                     444
                                                                                                                                 504
                                                                                                                                                                                                                                                                    430
                                            564
                                                                                                                                                                           490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          267
                                                                                                                                                                                                                                                                                                              384
                                                                                                                                                                                                                                                                                                                                                         370
                                                                                                                                                                                                                                                                                                                                                                                                     324
                                                                                                                                                                                                                                                                                                                                                                                                                                             .310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     147
```

음 성 B 8 Search completed: March 10, 2004, 23:46:55 Job time : 4191.5 secs 671 ACATCTCACTTTAG 684 611 TCTTGTGATGATAACATGCAACAATTCATTCGAACCATTGAAGCTGCGAAATCTTTACCA 670